DOCUMENT RESUME

ED 048 444	VT 012 054
TITLE	The Cost and Output of Graduate Social Work Education: An Exploratory Study.
INSTITUTION	Cooper and Co., Stamford, Conn.
SPONS AGENCY	Social and Rehabilitation Service (DHEW), Washington, D.C.
PUB DATE	Apr 70
NOTE	203p.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (HE17.2:G75, $1.75)
EDRS PRICE	EDRS Price MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	*Cost Effectiveness, *Decision Making, Educational Objectives, *Graduate Study, *Professional Education, Research Methodology, *Social Work

ABSTRACT

This study of cost-sensitive factors and relationships in graduate social work education is a first step in developing concepts and research methodology as a basis for further research to aid administrators in making decisions for more effective use of resources. Identification of costs and cost-sensitive factors is approached within the framework of decision theory, since the problem of estimating costs for decision-making involves predicting future consequences of current decisions. Costs are only partially useful as an historical record of past expenditures and they provide a basis for improving effectiveness in achieving objectives only when viewed in terms of the kinds of decisions that must be made. The report recommends that the government initiate a national study to generate cost data and analysis, and to assist social work schools in transforming themselves into production operations. (BH)

ED0 48444

W-R-1
18

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Social and Rehabilitation Service
Office of Research, Demonstrations, and Training
(Contract SRS 69-11)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

THE COST AND OUTPUT OF GRADUATE SOCIAL WORK EDUCATION:

AN EXPLORATORY STUDY

PRELIMINARY
FOR DISCUSSION ONLY
NOT FOR QUOTATION OR CITATION

VT012054

COOPER AND COMPANY
19 Third Street
Stamford, Connecticut

April, 1970

PREFACE

Contemplating the nature and extent of our debts in carrying out this project, it occurred to us that, as discussed in another context later in this report, sometimes it's hard to distinguish between costs and benefits. In such cases we might appropriately be silent, or, perhaps, give people the benefit of the doubt and credit them with an A for effort.

Being imbued with a desire to "tell it" as it appears to us to be, we must acknowledge, however, that we have had a strong urge to prepare two lists: (1) those who clearly tried to, and did, help us conduct the project; (2) those who clearly tried to impede and discredit it. The second list would certainly be very short by comparison, but, in the interests of unborn generations, we cannot help but wonder whether it is not time for an innovation--namely, the publication of an "s" (for "second") list in front of each report which documents the political chicanery and the malice associated with that effort. Eventually, if this list were absent from a research report, the reader might be led to question whether the research could possibly be useful.

Well, we may introduce this particular innovation next time. For this occasion we content ourselves with the identification of those who contributed positively and materially to this project, but are not in a position to take appropriate credit. We acknowledge, first, the countless ways in which personnel of the Social Welfare Manpower Research Branch, Social and Rehabilitation Service, Department of Health, Education, and Welfare made our task easier. In particular, we acknowledge our debt to its Chief, Dr. Jean K. Szaloczi, who made our work both more pleasant and more productive. If only there were some way to ensure that all Project Officers understood research!

We acknowledge with gratitude the help we have received from the Liaison Committee established by the Council on Social Work Education and the Federal Government, many of whose members went out of their way to assist us as individuals, beyond what might have been expected from them as members of the Committee. The members of the Committee are as follows:

Non-Government Representatives:

Mr. Samuel Finestone
Assistant Dean
School of Social Work
Columbia University

Mrs. Carolyn E. Kessler
Assistant to the Business Manager
School of Social Work
San Diego State College

Dr. Walter L. Kindelsperger
Dean, School of Social Work
Tulane University

Mr. Kenneth Kringle
later replaced by
Mrs. Louise S. Bakke
Division of Family Services
Department of Health & Social Services
State of Wisconsin

Dr. Lillian Lampkin
Acting Dean
School of Social Work
Hunter College

Dr. Katherine Lower
School of Social Work
Bryn Mawr College

Miss Sylvia Solovey
Associate in Professional Education
Community Service Society

Dr. Robert D. Vinter
Associate Dean
School of Social Work
University of Michigan

Dr. Ernest F. Witte
Dean, School of Social Work
University of Kentucky

Government Representatives, Department of Health, Education, and Welfare:

Mr. Morton J. Adler
Acting Chief
State Plans and Projects Branch
Community Services Administration

Miss Beatrix Park
Acting Specialist on Training in
Child Welfare
Child and Family Services Division
Community Services Administration

Mr. Harold F. Shay
Acting Chief
Division of Training
Rehabilitation Services Administration

Dr. Richard Swim
Grant Administration Policy Specialist
Policy Branch
Division of Grants Administration Policy
Office of the Secretary

Dr. Clark Tibbitts
Director, Training Grants Staff
Administration on Aging

Dr. Milton Wittman
Chief, Social Work Training Branch
Division of Manpower and Training Programs
National Institute of Mental Health

Mrs. Corinne Wolfe
Chief, Training and Manpower Development
Division
Office of Research, Demonstrations, and
Training

The Council on Social Work Education, while it acted as Subcontractor in the performance of the project, cannot take credit or blame for this report. It is therefore appropriate to record the help we have received from Dr. Arnulf M. Pins, Executive Director; Dr. Lillian Ripple, Associate Executive Director; and Dr. Frank M. Loewenberg, Director, Division of Special Projects and Research.

Finally, we acknowledge the indispensable assistance of certain personnel of the pilot schools and divisions of social work:

Catholic University of America:

Mrs. Dorothy Bird Daly, Dean
Mr. Daniel A. Searing,
  Assistant to the Dean for Administration

Tulane University:

Dr. Walter L. Kindelsperger, Dean
Mr. Fred M. Southerland,
  Assistant Dean and
  Director of the Office of Student Affairs

University of Chicago:

Dr. Harold A. Richman, Dean
Mr. Robert A. Weagant,
  Associate Dean
Dr. Alton A. Linford, Professor

University of West Virginia:

Dr. Leon H. Ginsberg, Director
Mr. Earl Yaillen, Assistant Director

TABLE OF CONTENTS

Preface iii

Table of Contents vii

List of Tables ix

Executive Summary xi

Chapter I INTRODUCTION 1
A. Sponsorship 1
B. Content of the Report 1
C. The Problem of Communication 2
D. Basic Rationale for Study of Costs 4

Chapter II PROJECT OBJECTIVES AND APPROACH 7
A. Summary 7
B. Project Objectives 9
C. Development of an Approach 31

Chapter III THE PILOT SCHOOLS: DESCRIPTION 48
A. Summary 48
B. Preliminary Steps 50
C. How Decisions About Graudate Social Work Education Are Made 56
D. Characteristics of the Schools 74
E. Characteristics of Agencies 91

Chapter IV THE PILOT SCHOOLS: COST MODELS AND ESTIMATES 99
A. Summary 99
B. Introduction 101
C. Variations in the Total Cost Concept 102
D. Variations in the Output Concept 115
E. Continuing Education 121

Chapter V LIMITATIONS AND IMPLICATIONS OF CURRENT MODELS 126
A. Summary 126
B. Predictive Capabilities of the Models 128
C. Explanatory Content of Models 133
D. Implications of Absence of Input-Output Models 135

Chapter VI GRADUATE SOCIAL WORK EDUCATION AS A PRODUCTION PROCESS 138
  A. Summary 138
  B. Social Work Educators As Agents of Change 141
  C. Objectives 143
  D. Resources 152
  E. Relating Resources to Objectives 155

Chapter VII THE NATURE AND SIGNIFICANCE OF FURTHER STUDY 170
  A. Summary 170
  B. Introduction 172
  C. One-Time National Study 173
  D. Continuing Study 177
  E. Combining Short-Term and Long-Term Considerations 180
  F. Recommendations 181

Bibliography 186

LIST OF TABLES

TABLE NO.	TITLE	PAGE
1	School Characteristics	55
2	Distribution of Direct School Costs	59
3	Interchange between Schools of Social Work and Other Schools and Departments	61
4	Distribution of Full Time Faculty Field Instructors by Number of Students Assigned	65
5	Distribution of MSW Class Size	66
6	Distribution of Doctoral Class Size	67
7	Class Size Distributions Graduate School of Social Work X	69
8	Distribution of Agency Field Instructors of Students Assigned	78
9	Percentage of Students under Agency or Faculty Fieldwork Instruction	79
10	Distribution of Full Time Faculty Salaries	83
11	Data Items	86
12	Faculty Activity Survey Form	89
13	Reverse of Faculty Activity Survey Form, Showing Instructions	90
14	Distribution of Faculty Time by Activity	92
15	Form for Estimation of Agency Effort in Field Supervision, and Instructions for Use	94
16	Use of Agency Resources for Instruction	95
17	Distribution of Agency Field Work Instructor Salaries	96

TABLE NO.	TITLE	PAGE
18	Agency Instructor Salary Expense per Student-Year	97
19	Direct School Expenses: Model #1	106
20	University Operating Expenses: Model #2	111
21	University and Agency Operating Expenses: Model #3	113
22	University and Agency Operating and Capital Expenses: Model #4	116
23	Costs per Student-Year: MSW and Ph.D	118
24	Cost per Student-Year: Field and Classroom Instruction	120
25	Costs per Student-Year of Instruction, When Other School Outputs Are Estimated	122
26	Direct Costs of Continuing Education	125

EXECUTIVE SUMMARY

The work reported on here was planned as the "exploratory" phase of a national study of the costs of graduate social work education in the United States. The conclusions of this phase primarily depend, therefore, on the findings of the investigators at four pilot schools which agreed to cooperate in the study. These schools were selected partly in the hope that they would display the kinds of problems which might be encountered in a national study, and partly to throw light on the factors importantly influencing the costs of graduate social work education.

The concept of "the costs of graduate social work education" is one which requires careful attention. It is shown that there is no satisfactory general concept of what to include or exclude from "costs." Whatever may be included, costs should, to be useful, be viewed as consequences of decisions, and it is desirable to establish quantitative relationships between decisions, or choices, and the costs which flow from them. These relations are "cost-estimating relationships." Different "total costs" and relationships may be appropriate in different settings.

For purposes of the pilot study costs are viewed as actual or potential university expenditures for goods and services utilized in graduate social work education. The word "potential" is intended to imply an interest in certain kinds of expenditures which the university could be called upon to make, such as payments to social welfare agencies for the services of their field work instructors, and payments to faculty in the future, which may be constrained by tenure. Further, the fact that expenditures are viewed as being for goods and services means that neither stipend payments to students nor the income they forego are included in our cost concept.

It seems clear from the pilot schools that virtually all of the "direct" university costs of graduate social work education are incurred within the graduate school of social work, that is, there is little interchange between the school and other schools or departments. These direct school costs are estimated, for the pilot schools in the year 1968-69, to be in the range of $2,500 - 3,200 per student-year. If university overhead is added, the cost per student-year rises to $3,800 - 4,600. On a still more inclusive basis, including estimated agency instructional costs, the cost rises to $4,000 - 5,300, per student-year, while if a nominal allowance is made for university plant, the cost range becomes $4,200 - 5,900 per student-year. We note that these costs are substantially comparable from school to school, and that there appears to be no reason why such data cannot be obtained for every school which is willing to cooperate.

When we try to look behind these data, to find out why the costs are what they are, or why they differ from school to school, the situation is still clear, up to a point. Graduate social work education costs are dominated by the costs of instructors and support staff, so a high cost per student implies a small number of students per faculty member. In principle a small number of students per faculty member might reflect a concern for quality--as some faculty claim. In practice, we find great variation in class sizes within the same institution for the same level (e.g., master's degree). We also find that the distribution of class sizes in one year differs greatly from that in the next. We find some field work instructors handling two and three times as many students as others (considering only full-time instructors). There were (in the pilot schools) no systems for allocating all of the major elements of work load to faculty, and no recognized concept of how much time is in the official work week. It is hard to see how underutilization of some faculty can be avoided in such circumstances, and we note that, in one non-pilot school for which we had some information, where a formal work load allocation system existed, the school itself concluded that very substantial increases in utilization were possible. In no school with which we are familiar were data collected on the absolute amounts of time spent by faculty on various activities (such as teaching, preparation, advising, etc.), although a small sample was obtained during this pilot study.

From one point of view such findings can be regarded as suggesting simple inefficiency, and, if we accept this view we can construct simple relationships which say, in effect, that a given school tends to operate so that it will handle, say, seven times as many students as faculty members, while another handles eight times as many. We would "explain" the observed difference between the schools by saying that one is more efficient than the other. It appears to be more accurate to say, however, that the schools lack a concept of efficiency. It is as if we were to describe one family as being more efficient than another because one maintained its children with an expenditure of $700 per year per child and the other with an expenditure of $800. In the latter case what we can say with assurance is what the expenditures were, but we cannot really say "why."

As the report points out, the concept of efficiency is one which applies to production processes, that is, to processes in which there are acknowledged outputs (or ends) and acknowledged inputs (or means). In the context of a production process efficiency means getting as much output as possible for the given input, or getting a specified output with as little input as possible. The schools appear to lack this view of themselves as production processes. Decision-making authority is diffuse and uncertain. There appear to be no commonly accepted school or university objectives which guide the decisions made by faculty. Inputs are unmeasured and unknown. The idea that scarce educational resources (or dollars) should not be wasted is not one which appears to play a large role in faculty deliberations.

In such circumstances we might anticipate a great instability in the operation of the schools, but there are some forces operating which make for certain kinds of stability. The first of these is the university's budgetary process which, at least in some cases, has the property that it forces the schools to budget in terms of a university-imposed student-faculty ratio. If that ratio is 7 to 1 there are not, as a rule, forces operating to make the school strive for 8 to 1 or more. In other cases, the existence of faculty members with tenure and difficulties in attracting qualified students combine to make substantial changes very difficult. We believe it is significant that the school with the lowest cost per student-year was one in which the budgetary process made it necessary to compare school costs and school income, and the pressure to close the gap made it desirable to seek ways of increasing the school's output with given input.

There are two major kinds of implications of the fact that schools operate more like families than like production processes, of which the first is methodological. In order to throw light on such questions as the effect of school size on cost, or the factors making for differences in cost between master's-level and doctoral-level education, it is necessary to describe the causal connections between the inputs to the process and the outputs of the process. This requires, at minimum, that we know both inputs and outputs, and that we be able to describe the maximum output achievable with given input. In fact, however, the dimensions of output are not agreed upon, meaningful measures of input are lacking, and the schools themselves appear to have no firm ideas about the characteristics of the educational process which really limit output. If, therefore, one allocates costs to master's and doctoral programs, respectively, the observed relative "cost" is about as likely to reflect chance factors as it is to reflect fundamental characteristics of the educational process. Cost estimating relationships which purport to explain such cost phenomena are not likely to be worth very much.

If, as we have indicated, the schools largely lack a production process orientation, it is clear that, to continue to merit public support in the long run, they will need to transform their ways of thinking and doing business. First, they will need to establish objectives, at a level of specificity which has some chance of influencing the actions taken. In this report it is suggested that although the schools must establish their own objectives, the objectives which appear reasonably acceptable to some social work educators are of three kinds: namely, those related to the number, kind, and quality of trained students; those related to new knowledge or research; and those related to community service. It will also be necessary for the schools to determine what inputs "matter," in such terms as the inclusion or exclusion of agency costs, and the work load of faculty themselves. They will also be compelled to consider the logical and causal relations between inputs and outputs, and hence to think in terms of the impact of the use of resources this year upon next year's achievements. This last statement is just another way to say that they will be compelled to think in long run terms, and to pay attention to the critical, dynamic role of such activities as fund raising, attracting students and teachers, curriculum development and faculty development. When this process has proceeded far enough, it may be possible to develop automatic data-processing techniques which will assist the schools to achieve better planning and efficient operation.

The changes in school operation to which we have just referred are, to some extent, inevitable, but if no Government action is taken, they are likely to require a very long time. What is perhaps even more serious is the fact that a major opportunity to learn more about graduate social work educational processes may be lost. If the Government takes the lead in encouraging schools to move in what is obviously a desirable direction, it may very well be possible to develop common measures and observations of the educational process in many schools, even though each chooses its own objectives and modes of operation. With common systems of measurement, meaningful evaluation and appraisal of these various, natural "experiments" in education can take place. We can begin to lay the basis for finding out the answers to such gross questions as whether the quality of the trained students depends in any way upon the observed differences in the educational process; and, if the answer is in the affirmative, we can go on to try to discover what specific factors make a difference. We may even have a chance to find out whether the qualities which educators believe trained students should have are, in fact, the qualities which matter in an operational environment. If the Government does not take the lead, schools will proceed individually in their own directions, and the opportunity for learning from analysis of pooled experience will have been largely lost.

The report points out that it is possible for the Government to initiate such collaborative activity and, at the same time, to collect such cost-related information as may be currently available for immediate use in Government budgeting and policy making. Because of the nature of school operations, it will not be possible to reach firm conclusions about the effects of such phenomena as size, or about the difference in costs between master's and doctoral programs, but it is possible, nevertheless, that the influence of these factors will be suggested by analysis of data from a larger sample. The inclusion of every school in the country would not yield a "sample" which was large enough for statistical reliability, however.

Some data were developed in the course of the study which have intrinsic interest:

> Voluntarily reporting faculty said that they worked about 45 hours per week on the average, during periods when school was in session, although there was great variance. Of this time about 52% was related to instruction (lectures, preparation, advising), 4% to research and 5% to community service.
>
> Agency field instructors say they devote about one-half day per week to each student assigned, no matter whether the assignment is on a concurrent or block basis. In one of the schools faculty field instructors handled, on the average, a comparable number (nearly ten), but in two other schools the average full-time field faculty load was about six students.
>
> The average class size in master's programs varied from 16.5 in one school to 31.8 in another. The average doctoral class size ranged from 6.1 students in one school to 8.1 in another.
>
> Salary and fringes accounted for 89 to 94 percent of direct school expenses. Average faculty salary ranged from $12,900 to $15,200 per year. Student stipends ranged from $1600 to $2400, on the average. Space per student varied from 42 to 103 square feet.

What do all of these differences signify? Because many of the differences offset one another within a school, the observed differences in cost are not nearly as large as they might have been. In general we do not believe that they signify intrinsic differences in educational processes or even in beliefs about educational processes. They are, we think, largely the result of "tradition" and a pattern of expenditure or consumption which is bounded by budget and not by considerations of efficiency.

The report concludes with the recommendation that the Government undertake a multi-phase study, of which the first would be a planning phase to be completed before the beginning of the next academic year. Phase II would take place during the coming academic year and would both develop existing cost information and assist the schools to establish objectives, inputs, input-output relations, and common observations of incoming and outgoing student quality, faculty utilization, etc. Analysis of the new common data would be the subject of subsequent phases.

Chapter I

INTRODUCTION

A. SPONSORSHIP

This study of costs of graduate social work education was carried out under the sponsorship of the Social and Rehabilitation Service, Department of Health, Education, and Welfare. More specifically, the study was conducted under the technical direction of the Chief, Social Welfare Manpower Research Branch.

The significance of this sponsorship should not be overlooked. The study clearly has its origins in a concern for the future adequacy of social work manpower, and the national resource requirements for achieving such adequacy. This is in no sense an accounting study, or audit, of how public or private funds were expended in the past, nor is it concerned with such problems as those faced by the Government in allocating grant funds or determining overhead rates for reimbursement purposes. The objectives of the study are discussed in some detail later, and for the moment it is pointed out merely that the study, given its sponsorship--and its outcome--might easily have been described as addressed to "factors affecting the output of graduate schools of social work education."

It seems equally significant to point out that there is a real sense in which social work educators were themselves sponsors of this effort. Although it is difficult to document even the known activities of individual educators in initiating the effort, the role of the Council on Social Work Education is clear, as is the part played by the Council and Liaison Committee in the actual conduct of the study. The study cannot properly be viewed, therefore, as an outside audit of the field of social work education, but is more accurately regarded as a courageous, and perhaps pioneering, effort at self-examination and self-improvement by those with responsibilities in and to that field.

B. CONTENT OF THE REPORT

It would have been very easy to prepare this report along more or less conventional lines, beginning with what we did, progressing to what we found, and concluding with our recommendations, if any. This was a very attractive possibility, because it would at once have made the report more readable and, at the same time, have concealed the fact that we did not know the answers before we started. The same result could have been achieved by describing the whole project in pseudo-scientific terms involving testing of hypotheses, and we could have then established that some hypotheses were untrue. Instead, we have tried to match the courage of social work educators, by making clear how our own views have evolved. The qualitative difference between our initial and final positions is actually quite subtle but, in our judgment, extremely important for those who may be moved to take action based on our findings. It is neither masochism nor sadism which moves us in this direction.

In accordance with this view the report is organized in the following way, after this Introduction. First, the objectives of the project, as stated by the Government, are discussed, and an approach to the achievement of these objectives is developed and presented. This approach is itself on the boundaries of the state of the art of cost analysis, and a thorough understanding of its ideas, while difficult, is, in retrospect, extremely important for those concerned with social work education.

The report goes on, in Chapter III, to describe, so far as confidentiality permits, some of the characteristics of the pilot schools, as perceived by the investigators. Significant new numerical information is also introduced. Chapter IV deals with costs in the pilot schools beginning with a number of different concepts of total costs for graduate schools of social work education. Thereafter cost-estimating relationships are presented, corresponding to the various total cost concepts, and to various ideas about the output of social work education.

Chapter V discusses in detail the limitations of the cost-estimating relationships presented in Chapter IV. Current characteristics of the schools, which limit the availability of better cost-estimating relationships, and which--more importantly--limit the efficiency of the schools, are identified. Chapter VI describes a broad direction in which schools might seek to move to improve their own operations (and which would, in the long run, increase the significance of cost-estimating relationships).

In Chapter VII the nature and significance of further study of schools of social work education is discussed, including the question of whether and how a national study of costs might be carried out. The report concludes with a series of recommendations to the Government and to social work educators.

C. THE PROBLEM OF COMMUNICATION

We are conceited enough to regard it as being of the greatest importance to communicate our views and findings to those with professional or programmatic interest in graduate social work education. We have been struck, however, with the very wide range of backgrounds of interested educators and Government officials, and with the consequent difficulty of communicating with all of them within the framework of a single document and a limited vocabulary. The meaning of such jargon as "cost-estimating relationship" is known or obvious to some, but a concept to be wrestled with for others. The idea of a "student-faculty ratio" may be comprehensible to all, but we know it may be disastrous for some to say that if the symbol $\equiv$ means "is defined as" and if

$$N \equiv \text{Number of Students}$$

$$M \equiv \text{Number of Faculty}$$

then, the student-faculty ratio

$$\alpha \equiv N/M$$

We have attempted to cope with this problem by utilizing language which appears to us to be as unspecialized as possible, and by providing summaries. Obviously, however, the need for "technical" language may be strongest in a summary statement: how does one convey the concept of "model" in a summary, when the real need of the "non-technician" is for expansion, elaboration, and even repetition? The summaries may not be adequate, therefore, to the needs of those who have difficulty even with our heavily censored language, but may be useful to those who desire instant expertise, or who need to be rescued, occasionally, from the morass of ideas which may only be touched on, inadequately, in passing. For those who may be in doubt we promise, too, that summary statements can be read without fear that a humorous or whimsical thought may have been allowed to creep in, at least intentionally, but those who are rash enough to undertake the reading of the whole text will have to take their chances.

Summary statements of three kinds are present in the report. The first is an "Executive Summary" of the whole, which precedes this Introduction, and is designed primarily to make readers of the whole report think that there are "executives" who care what it says; or, alternatively, to make them think that they are themselves very unusual executives because they are reading more than the Executive Summary. The second, and somewhat more extended kind of summary occurs at the beginning of each chapter, and these will have the effect of encouraging particular chapters to be read or skipped (we wrote them so that the poorer chapters would be avoided). The final type of summary statement occurs at irregular intervals throughout the text, and legitimizes our natural tendencies toward rumination, even in the eyes of those who do not think it is a good idea to produce milk or meat.

Summary statements at all levels may be distinguished readily by the fact that they appear to be in larger-than-normal type (although they are not, in fact).

D. BASIC RATIONALE FOR STUDY OF COSTS

It is probably true that, today, most people will concede the importance of knowing costs for business decisions, government policy determination, and even personal affairs. This acceptance, to the extent that it exists, is largely derived from tradition: after all, controllers, auditors, tax collectors, and spouses have been around for a long time. In other words, most people live in a world in which budgetary constraints are important, and knowledge of costs is viewed as being useful in avoiding the violation of these constraints.

Along with this acceptance, however, there is also a tendency on the part of some to relegate costs to a secondary role: the so-called "bean-counter" is distinctly a second-class citizen. Indeed, to some it is a matter of morality. How can costs be considered when human lives are at stake--on the battlefield of Vietnam or in the halls of Academia? In other words, military men, educators, social welfare workers, and others concerned with the well-being of mankind, sometimes behave as if no truly moral person would ever concern himself with costs. Hitch, indeed, describes this feeling as "deeply rooted," and goes on

> "To anyone trained in economics, this is a most puzzling attitude... benefits cost resources and we live in a world in which resources are limited. If we use more for one purpose, less remains for other purposes--even in as rich a nation as the United States." *

Former Secretary of Defense McNamara has given a simple illustration of Hitch's general position.

> "Suppose we have two tactical fighter aircraft which are identical in every important measure of performance, except one--Aircraft A can fly ten miles per hour faster than Aircraft B. However, Aircraft A costs $10,000 more per unit than Aircraft B. Thus, if we need about 1,000 aircraft, the total additional cost would be $10 million.
>
> If we approach this problem from the viewpoint of a given amount of resources, the additional combat effectiveness represented by the greater speed of Aircraft A would have to be weighed against the additional combat effectiveness which the same $10 million could produce if applied to other defense purposes--more Aircraft B, more or better aircraft munitions, or more ships, or even more military housing...Thus the fact

---

*Charles J. Hitch, Decision-Making for Defense (Berkeley and Los Angeles: University of California Press, 1965), p. 44.

> that Aircraft A flies ten miles per hour faster than Aircraft B is not conclusive. We have to determine whether the greater speed is worth the greater cost." *

It would appear, then, that if we are really interested in saving lives through national defense, we had better recognize a derived obligation to be interested also in costs. Obviously, the same general position is valid if our interest is in improving the quality of life through social work education. Is it better to hire two assistant professors for $28,000 or one full professor for $20,000? If resources are limited--as they always are--is it better to opt for more faculty in method A or in method B? In the Hitch-McNamara (or planning, programming, budgeting) view, there is a kind of means-end relation between costs and benefits, and an interest in costs is therefore a logical corollary of an interest in benefits. If a Government official or social work educator wants to produce more social workers, or better-trained social workers, and this is all that really matters, it would be folly not to be interested in costs.

There are some however, for whom the matter does not end there (or even begin). For example, Macfie has written,

> "'Economic science limits itself to scarce means, therefore it is merely instrumental' is not convincing logic. Indeed, why it should so easily be assumed that efficiency has no value in itself is a question to which the plain man finds no easy answer. His simple reaction is to regard efficiency as good in the same sense as courage is good, though in a lesser degree...It is only when we contemplate in its highest forms the social obligation, the moral privilege which the exercise of efficiency can express that we appreciate the inherent value of efficient service." *

Thus the view that concern with costs is (sometimes) immoral exists alongside a view that economic efficiency is itself a moral obligation, without regard to its place in a means-ends schema. Perhaps all that the latter view really requires of

---

* "From the introduction of the Statement of Secretary of Defense Robert S. McNamara before the Committee on Armed Services on the Fiscal Year 1965-1969 Defense Program and 1965 Defense Budget, January 27, 1964, Hearings on Military Posture and H-R 9637, House of Representatives, 88th Cong., 2d Sess. (Washington, D. C.: U. S. Government Printing Office, 1964)" as quoted in David Novick, Editor, Program Budgeting (Washington, D. C.: U. S. Government Printing Office), p. 34.

** Alec L. Macfie, Economic Efficiency and Social Welfare (London: Oxford University Press, 1943), p. 110.

us is the recognition that social work education, important as it may be, is not the only social purpose for which resources may be used.

It is not our intent at this point to try to establish the true nature of economizing activities, although both views, while limited, are consistent with the cost concept we shall develop. What it may be important to appreciate at the outset is that a concern with costs, whether stemming from imposed legal/institutional arrangements, or derived from the logic of means and ends, or from a conception of morality in which economic efficiency is viewed as an ultimate good (like justice), is the starting point for the present study. To view such a concern as generally subordinate to other social concerns, such as the preservation of life, is mere confusion of thought. Those who feel that they have some sort of responsibility for the quantity/quality of social work education dare not admit a disregard for costs, for to do so is to confess to illegal behavior, or to professional incompetence, or to immorality--sins which are not mutually exclusive.

Chapter II

PROJECT OBJECTIVES AND APPROACH

A. SUMMARY

The Government's Request for Proposal made clear its desire for "an exploratory and pilot study of factors of costs in social work education for the purpose of developing methodology and a study design for a survey of cost factors in all accredited graduate schools of social work in the United States." The "fundamental problem" was described as being "to develop a uniform methodology for analyzing costs incurred and forecasting expected operating costs and capital expenditures in order to assist the school of social work and the parent universities in planning their future and managing their expenses and to assist SRS in budgeting and program planning activities." The "research approach" was specified as involving "three or four graduate schools of social work in order to develop parametric estimating equations consisting of factors or terms which are significantly sensitive for predicting costs when related to appropriate independent variables." A number of questions to which the subsequent, national, study was to supply answers, were also identified in specific terms, e.g., "What are the current costs of graduate social work education?" "What are the cost-estimating relationships among and between cost elements and functional categories?"

An approach to the study was developed based partly on a concept of costs which has not been dealt with adequately in the literature, and which is therefore discussed in detail in this report. Costs are viewed as consequences of choices or decisions; and the particular consequences which are to be included as "costs" must be rather arbitrarily determined.

The approach developed involved a number of activities of an interacting nature: (1) identification of government and school decision problems relative to graduate social work education; (2) selection of pilot schools on the basis of a priori identification of major difficulties which might be encountered in the planned national cost survey; (3) identification of controllable (input) variables in the pilot schools; (4) identification of cost and output variables in the pilot schools; (5) the construction of mathematical relationships, for the pilot schools, between controllable variables on the one hand and cost/output variables on the other; (6) the development of hypotheses to be tested in the national study; (7) the development of the design of the national study; and (8) preparation of a written report on pilot activities--which is the current report.

Of these activities the most critical was assumed to be the construction of mathematical relationships which would be based on the underlying constants (parameters) of the educational process, such as school policies with respect to class size, admissions policy, and faculty workloads. It was anticipated that there would be problems of data collection and of statistical inference, in order to establish the values of these parameters, and it was to this area of anticipated difficulty that primary consideration was given prior to study of the pilot schools.

B. PROJECT OBJECTIVES

1. Request for Proposal

Objectives can be stated in many ways and at many levels. Perhaps the best place to begin, however, is with a statement of the problem as seen by the Government in its request for a proposal "to conduct an exploratory and pilot study of factors of costs in social work education for the purpose of developing methodology and a study design for a survey of cost factors in all accredited graduate schools of social work in the United States." The problem was stated as follows:

> "To meet the growing need for more professional social work manpower, graduate professional schools of social work are undertaking significant increases in enrollment and major expansions of curricula. Also, new graduate professional schools of social work are being formed. This unprecedented expansion requires careful planning. One of the major aspects of careful planning is the preparation of realistic, time-phased financial plans.
>
> "Unfortunately, detailed information about the costs of graduate professional social work education is lacking. No study which examines the variation of costs among schools has been undertaken. Cost studies of individual schools have been few and generally unsatisfactory. Not enough is known about the distribution of costs between schools, the factors which are most sensitive in causing costs to vary, or of the elements of costs of social work education.
>
> "Concurrent with the enrollment and curriculum expansion, the graduate professional school of social work finds itself planning to use the available innovations from the new educational technology. This area of innovation can become a financial problem to the school since social work education experience with these techniques and equipments generally is lacking.
>
> "The Social and Rehabilitation Service provides a number of grants to graduate professional schools of social work throughout the United States. There are sixty-four accredited graduate professional schools of social work. SRS requires a method to assist in predicting the required funding within the annual budget and their five-year program so that financial support to education is adequate to assure necessary professional social work manpower for SRS programs."

The request for proposal goes on to describe the "Purpose of the Study" in the following terms:

"The fundamental problem is to develop a uniform methodology for analyzing costs incurred and forecasting expected operating costs and capital expenditures in order to assist the school of social work and the parent universities in planning their future and managing their expenses and to assist SRS in budgeting and program planning activities."

The request for proposal then describes a desired "Research Approach:"

"The proposed research approach is exploratory research and a pilot study of three or four graduate schools of social work in order to develop parametric estimating equations consisting of factors or terms which are significantly sensitive for predicting costs when related to appropriate independent variables. Parametric cost-estimating methodology requires the development of mathematical equations in which the cost element by category is calculated as a function of one or more independent variables. The methodology must allow for the effects of both primary variables and secondary variables.

"The methodology will identify variations among schools and the impact of various factors by school and for all schools. Data from schools will be held confidentially by the contractor.

"Functional categories of education for which costs will be estimated should include on-premises continuing education, off-premises continuing education, on-premises masters degree education, on-premises doctorate education, research and development, curriculum and course development, on-premises field instruction (costs of school), off-premises field instruction (costs for both school and agency), admissions, and student counseling.

"This exploratory and pilot study is expected to lead to the development of a national survey which will yield specifically data to answer the following questions:

1. What is the cost structure of graduate social work education? What are the functional categories which have a significant impact on costs? What are the cost elements which must be measured to obtain a clear and useful picture of the total cost picture? How are the functional categories and cost elements to be defined? How are they to be measured? What is the relationship of cost elements to functional categories to cost elements?

2. What are the current costs of graduate social work education? What is the variation among schools?

3. What are the cost estimating relationships among and between cost elements and functional categories?

4. What school characteristics are related to variations in costs? This question is directed to the cost picture only and does not speak to the issue of the quality of education and is not intended to imply that cost is a primary criterion for educational content or method decision."

The attention of the reader is directed to the fact that these were questions to be answered following the proposed national survey, rather than by the pilot effort reported on here.

The request for proposal also anticipated some "Problems of Data:"

> "Accounting procedures vary enormously by school as do arrangements for administering and managing the various aspects of providing graduate social work education. Data collection procedures must be designed to place all data from all schools on a common basis so that variation among schools and the differential impact of factors can be analyzed. Since accounting procedures are so varied and cost accounting procedures so rare, data collection methods must be designed to obtain the required measures by other means if necessary. The problems of identification of significant variables and the development of appropriate measures poses a challenge to the design of this project."

The Government's interest, as expressed in its request for proposal, was for a study which would lay the appropriate groundwork for a subsequent national study of costs of social work education. The focus of the present effort was seen as being in the identification of appropriate categories for data collection, specifying how to overcome data collection problems, ensuring comparability between schools, and establishing how the national study would proceed to develop cost estimating relationships which would show what factors really cause costs to vary. The Government's interest in costs arises from its desire to assist the schools in management and planning and from its internal needs for budgeting and programming.

2. Meanings of Cost

The Government's request for proposal proceeds as if the meaning of "cost" were self-evident. Nothing could be further from the truth. For example, we speak non-technically of "the cost of meat," "depreciation cost," "the cost in lives," and so on, and it is apparent that they are unlike animals. It is easy to show, in fact, that even a sophisticate in cost concepts might have real difficulty by asking him to define "cost" in the situation in which he is contemplating an automobile trip in his own car, solo, from Washington, D.C., to New York City, and someone else asks to go along for his share of the "cost." The number of ways in which cost might reasonably be computed is staggering, involving the answers to such questions as the following: what allowance should be made for picking up the passenger at home? Should there be an allowance for the driver's time? What about depreciation? Should there be an extra allowance for wear and tear resulting from, say, careless handling of baggage? Should account be taken of the fact that the passenger may cadge a meal, or buy one? What about the fact that he might be willing to spell the owner with regard to driving, or even insist on it? What should be done about payment for tolls, gasoline and oil? Is the answer the same for emergency road service (e.g., a blow-out)? What about damage to the car resulting from poor driving by the non-owner? What about the wear and tear on the owner's nerves of several hours of unwanted chatter, or of a malfunctioning deodorant? And how does the answer change if the rider is the owner's boss, a poor relation, or an attractive blonde? Are the answers different if the car is rented or borrowed, rather than owned, or belongs to the Government and is being driven in line of duty? It is clear that the least unsatisfactory solution involves the Penn-Central or Eastern Airlines.

Unfortunately, such solutions are not available to us, for the approach to, and conduct of, both the pilot effort and the national study depend on what we view as the conceptual content of cost. The basic disciplines to which we tend to look for a description or definition of costs are, of course, accounting and economics, with the expectation that exposure to some fundamentals of these fields will quickly resolve any definitional problems. Emerging field(s) such as systems analysis or cost-benefit analysis are deeply involved with cost concepts and may be expected to remedy any conceptual deficiencies of the older disciplines.

"Cost" may, and does, have many meanings, so we will look to the scholars for guidance in determining what it should mean in this study.

Cost As Viewed by the Accountant. Surprisingly, general accounting textbooks are written, for the most part, as if a definition of "cost" were either impossible or unnecessary. One text, however, takes the bull by the horns with the following statement:

> "A cost accountant...thinks of costs as an outlay of expenditure made to acquire goods or services...it is merely a money consideration given in exchange for something of value...But this, in itself, is not sufficient to define the term...'cost' has become part of the technical vocabulary... The upshot...is that the cost accountant, instead of defining cost in the abstract, deals with specific situations by employing cost formulas to suit each case...Thus an item may have one cost for pricing purposes and a different cost for tax purposes...A cost is therefore not something exact; even so-called actual costs contain a large element of judgment. Hence, because cost cannot be defined precisely, cost accounting must not be thought of as an exact science, but as a flexible tool to be used by the cost accountant according to his best judgment and the governing circumstances." *

This is, as a matter of fact, about the best statement we have found in accounting texts, and its weakness is evident. That the definition of cost should depend on one's purposes is no surprise, although it is sufficient to call into question the insight contained in the opening words of the quotation. What is most disturbing is the fact that we are not told how the definition of cost depends on purposes. Moreover, we have all seen business and university financial statements, and other financial data prepared by accountants, which purport to provide estimates of costs, and yet contain not one word about the purposes on which they allegedly depend. Accounting data represent a version of history constructed, as a rule, before specific purposes are known.

Still, the quotation does provide one perhaps useful and certainly common definition of cost, "an outlay...made to acquire goods or services." We think it is accurate to say that this is, in fact, what determines the practical, or actual, content of accountants' statements. What are the total costs of a business or university? Obviously they are the sum of monetary expenditures or obligations by the organization for goods and services in a particular time interval.

It should not be assumed that the inadequacies of this definition of what might be called "historical cost" are of no practical significance to the accountant. Expenditures for new plant, for instance, may or may not be considered as "costs" in university financial statements. Government grant funds disbursed by a university may or may not be considered a cost. What this means is that even the term "total expenditures of University X in fiscal year t" is defined only when X and t--and the accountant--are defined.

---

*Lang, McFarland and Schiff, Cost Accounting (New York: The Ronald Press Company, 1953), pp. 4-5.

If, nevertheless, we accept this basic definition, and this is what accountants provide, why not utilize accounting data? After all, accounting data generally already exist, even in universities, and accountants are clearly specialists. The answer is, we think, that accounting is a discipline which has something in common with history: the time interval covered by accounting data is always a past interval. On the other hand, our "purposes" always pertain to the future, and the accountant provides no guidance to help relate historical data to the achievement of goals which lie in the future. It is, in fact, not difficult to think of goals or purposes to which accounting data appear nearly irrelevant, even when total expenditures of some sort are clearly relevant. If, for example, a university were considering building a dormitory, normal university accounting data would tell us very little that was useful, although we might get useful information by asking for bids.

Accounting texts, in general, proceed as if it is important to define particular kinds of costs, such as labor costs, fixed (or overhead) costs, distribution costs, and so on. All such discussions proceed, however, on the assumption that the basic cost concept, though undefined, is understood, and that the term "overhead cost," say, requires discussion of the meaning of "overhead" only.

Although not stated in the accounting texts we have consulted,--perhaps accountants take this for granted--we think it is important to note that an easily identifiable "owner" is always associated with accounting costs. If a cost is an expenditure to acquire goods and services, the costs with which the accountant is concerned are those of the acquiring entity--such as the university. Hence an expenditure by a student, or a government body, or by a foundation will never appear on the cost (expenditure) side of a university financial statement.

Some accountants have seen the significance of purposes in relation to cost concepts, but accounting data are, in practice, generally developed and presented in advance of a statement of purpose, and deal with past periods. Relevance to purpose may or may not exist. Costs are viewed as expenditures for goods and services, and specialized kinds of costs, e.g., materials costs, production costs, etc., are well defined--provided that one can assume there is no need to define costs in general. In accounting, costs always "belong" to a specific individual or organization.

Cost As Viewed by the Economist. Before discussing the economist's concepts of cost it may be useful to present an accountant's view of some of the differences between accounting and economics:

> "...It would seem...that accounting should be an integral part of economics; it should provide the information...from which economic conclusions are drawn.
>
> "In spite of this apparently intimate relationship...the two fields have developed to a considerable extent as thought the connection were incidental...many terms are used with quite different meanings in the two fields. Efforts to reconcile...have been disappointingly few.
>
> "There are a number of differences between accounting and economics which help to account for the independent development of each field. The accountant is almost always concerned with the problems of a particular business enterprise while the economist is more apt to be interested in the problems of an entire industry or of the economy as a whole. Accounting data are largely historical accumulations dominated by past 'actual' costs; the significant costs for economic analysis are those of the present or of the immediate future..." *

It appears, then, that economics is the field of interest, since we reject the backward look provided by accounting, and may require an orientation to society as a whole--given the sponsorship of the project.

In truth, economists are not nearly as reluctant as accountants to discuss the fundamental meaning of the cost concept, but if we require a simple, straightforward, agreed-upon definition we shall not find it in economics. Three of the older economic concepts of cost can briefly be described as follows: **

> "Once a scheme of prices has been fixed for the factors of production, there will be calculated for every finished product a price corresponding to the total price of all the factors of production used to produce it... This price we call the cost of the finished product. Cost in this sense is essentially an idea pertaining to an exchange economy, and is determined by the fixing of prices in that economy. The word 'cost' is also used to mean real cost of production, the aggregate of the necessary quantities of factors of production. This conception is,

---

*Mason and Davidson, Fundamentals of Accounting, Third Edition (Brooklyn: The Foundation Press, Inc., 1953), pp. 13-14.

**Gustav Cassel, The Theory of Social Economy, (New York: Harcourt, Brace and Company, 1932), pp. 91-92.

> however, incapable of arithmetical definition, and thus excludes the possibility of any quantitative comparison of different 'costs.'
>
> It is necessary to point out the difference between the conception of cost as we have defined it here and that as it is usually defined in economic theory, particularly in Marshall's exposition of it.[1] For Marshall, cost represents essentially a personal service, an exertion, a sacrifice, for which there must be certain compensation if it is to be made. Here, on the other hand, cost is being viewed in a purely objective manner as a consequence of the pricing process."
>
> [1] Marshall, Principles, Book V., chap. iii, sec. 2.

One of the concepts described--that advocated by Cassel--is clearly consistent with, but not necessarily identical to, the accounting view that costs are expenditures to acquire goods and services. Many modern economic theorists have, in fact, adopted this view, at least for purposes of analysis of the price system. On the other hand, the concept that costs are physical (non-pecuniary) quantities is one which may deserve attention later. Finally, the Marshallian view that the "real cost of production" corresponds to individual or personal "efforts and sacrifices" is one to which we will also allude.*

The breakdown of total costs (expenditures) between "fixed" and "variable" costs is important in economic literature, as well as the associated concepts of "short run" and "long run." The basic notion is that expenditures for some productive factors can be changed relatively quickly, and the others more slowly. For example, a university may be required to make payments on a long-term lease, giving rise to "fixed" costs. Over a longer time period the same items are variable, of course, since eventually a lease can be renegotiated or dropped. Thus, a cost can be classified as fixed or variable only after the time interval of interest has been determined.

The concepts of "average" and "marginal" costs, respectively, are familiar to students of economics. It should be noted that neither term can be given operational meaning until the (total) cost concept is defined. This follows from the definition of these terms: if $C(N)$ denotes the total cost of N units of something, the average cost is given by $C(N)/N$, while the marginal cost of the Nth unit is given by $[C(N) - C(N-1)]$. To discuss the relative merits of these concepts for any particular purpose, when the total cost C(N) has not been defined, is an obvious absurdity, although illustrations of this absurdity exist abundantly in the literature.

---

*The distinction--and confusion--between real and money cost concepts is an old one, going back at least as far as John Stuart Mill. Note, too, the confusion in the use of the word "real" as between Marshall and Cassel.

Economists often refer to "sunk costs," meaning costs (expenditures) incurred historically, and point out that they are irrelevant in many contexts. For example, the price at which the fisherman is willing to sell his catch does not depend on how much he had to spend for his boat. The salary a faculty member is willing to accept does not depend on how much he, or anyone else, had to spend on educating him.

Economists have introduced a number of other cost concepts which may be pertinent to our problem. The first of these is that of "opportunity cost." There are many variants of this idea, but its essence is as follows: if we produce N units of commodity or service A, denoted by N(A), and utilize as inputs the quantities X_1, X_2, X_3...of labor, capital, etc., the opportunity cost of N(A) consists of the quantity of the alternative product, B, which might be produced by the use of X_1, X_2, X_3... Opportunity costs can, in principle, be expressed in physical or monetary terms. In general, of course, there are many alternative product possibilities, so the concept requires the alternative product to be specified, or, if not specified, it is assumed that the opportunity cost is based on the most valuable alternative use. Note that opportunity cost, although often difficult to estimate, is socially determined: the evaluation in no way depends on the ownership of resources, or on who asks the question, or on the subjective evaluations of any particular individual. In this respect it is like most cost concepts of the economist, although this is not true of the Marshallian "real cost" doctrine mentioned above, or the concept of "external diseconomies" discussed later.

Economists also utilize the concepts of "increasing," "decreasing" and "constant" cost to describe certain aspects of production costs. The assumptions underlying these concepts are that sufficient time is allowed for whatever changes are desired in factors of production, and that it is average cost of production which is of interest. Thus, for example, the conditions are those of increasing costs if C(N)/N is less than C(N+1)/N+1.

The concept of "joint costs" also characterizes conditions of production. The more or less classical illustration of such conditions deals with the production of wool and mutton: there is a "joint" cost of producing these items because it is necessary to produce sheep in either case. An analogous case concerns the production of graduate social workers and, say, teachers, at least to the extent that both require college graduates. (No disparagement of college graduates is intended.) Within a school of social work, similarly, a faculty member may teach and do research, giving rise to joint products and joint costs, such as salary, of producing them. The problem of separating such costs may or may not be capable of meaningful solution, depending on considerations to be discussed at length later.

Economists, like accountants, have sometimes felt it appropriate for particular purposes, to distinguish various functional classes or subdivisions of factor expenditures. For example, administrative costs, marketing costs, distribution costs, advertising costs, etc., are merely elements or groups of elements of what economists call "production" costs, where production encompasses all of the activities contributing to a particular end product or service.

Economists have been much concerned with the time aspects of costs, and have introduced the concept of discounting or "present worth." The basic idea here is that $1 this year and $1 next year are not equivalent, from the standpoint of either payer or payee. In particular, it is necessary to apply a discount factor, e.g., 7 per cent, to next year's $1. If that were the appropriate rate economists would tend to say that next year's dollar is equivalent to 93 cents now, and that the "present value" of "$1 now and $1 next year" is $1.93.

All of the economists' cost concepts which we have discussed so far, except for the more or less classical concepts referred to by Cassel, are expressible, and sometimes actually defined, in dollar terms. Sunk, opportunity, average, marginal, short-run and long-run, fixed and variable, increasing, decreasing and constant, joint and discounted costs, are all conceptually related to market phenomena, and therefore possess clear dollar measures.

Modern economists have, however, recognized that some phenomena of a cost type are not included in any of these market-related cost concepts. For example, a factory which pollutes the environment, or ties up traffic, may be viewed as requiring expenditures by others: air pollution may imply greater maintenance expenditures for other firms or a greater incidence of lung cancer; or traffic congestion may require greater expenditures for gasoline. These "external diseconomies"* are not evaluated by any actual market process, and are usually assumed to be ignored by private decision-makers; but they may, nevertheless, be estimated and expressed in dollar terms, at least up to a point.

---

*The usage adopted here for the terms "external economies" and "diseconomies" is that of some, but not all, economists. For example, we have followed the usage given in Roland N. McKean, Efficiency in Government Through Systems Analysis (New York: John Wiley & Sons, Inc., 1958). Other usage, e.g., Joan Robinson, Economics of Imperfect Competition (London: MacMillan and Company, Limited, 1948), p. 340 et. seq., is such that it appears to cover the same causal phenomena as the concepts of increasing, decreasing and constant costs: for example, an increase in the price of a factor due to growth in the demand by an industry using that factor would be called an "external diseconomy," and would tend to generate an industry of increasing cost.

This compendium of economic cost concepts certainly includes the most common and most important ones in use until, say, two decades ago. More recent ideas are not unrelated, but have emerged in the context of the field(s) of systems analysis and cost-benefit analysis, even though economists have been largely responsible for their development. These ideas seem important enough to warrant separate treatment.

The concept of cost in economics has been defined in a number of fundamentally different ways: the aggregate of physical factors of production, the efforts or sacrifices of individuals, the alternative product given up by use of factors of production, total (market) price of the factors or inputs. Some of these can be measured in terms of socially established values, while others are individualistic and therefore "subjective." There are, however, costs which are not clearly one or the other, such as those attributable to air pollution. The significance of time (discounting) has also been stressed by economists.

Economists have distinguished many sub-categorizations of cost which take on meaning when the basic cost concept has been defined. These include average and marginal; short run and long run; sunk, fixed and variable; production, marketing, raw-materials, administrative, etc. Finally, they have characterized certain kinds of industry or production situations as involving joint cost (multiple products from a single process), whle others can be described as having conditions of increasing, decreasing or constant (average) cost.

Cost As Viewed by the Systems Analyst. Historically, the economist's concern with cost has been largely descriptive rather than normative. In other words he has tried to describe why the economic aspects of our society are what they are, assuming certain kinds of behavior on the part of the atomistic units (other than government) which actually make choices. He has been very little concerned with the determination of what these units ought to do, and has usually assumed that, one way or another, sooner or later, these units (firms and individuals) will find out, and do, what is good for them; that is, they will act in their own best interest. There was no need, for example, to educate these units on the nature of costs.

Systems analysis had its origins in the void left by traditional economics, and other traditional academic disciplines. The fact was that there were some (large) units, e.g., the Navy in World War II, which saw the need for assistance in doing the kinds of things which economists took for granted. It became clear even to some economists that it might be important for society, and not just for the unit involved, if that unit was very ineffective.

As systems analysts viewed the world, it was necessary first to define the system of interest more or less aribitrarily. Any system selected for study could be viewed as having inputs (e.g., Navy ships), and outputs (e.g., enemy casualties), with the inputs being connected to the outputs by some causal mechanism. To most systems analysts the inputs then represented "cost" factors, while the outputs represented "effectiveness," or "performance," or "benefits," or "gain," or utility": after all, the inputs and outputs which helped to define the system were usually selected because they were of interest to someone. Inputs were to be minimized, and outputs maximized--sometimes, in the early days, even simultaneously!

A few systems analysts (who have not given up their membership in the economics fraternity) have gone somewhat beyond the concept of costs as being related to inputs. For example, McKean has said:*

> "The consequences of an action fall into two types: (1) those positive gains which we like to increase, or the achievement of objectives, and (2) those negative effects which we like to decrease, or the incurrence of costs." (p. 34)
>
> "Costs are the consequences which have negative values...the sacrifices which have to be made."(p. 41)

There is clearly an important new thought here...costs are those consequences of actions which have negative values. But is there a useful way to distinguish a "cost" from a "benefit"? The question may seem facetious, but there is real difficulty in practice. If we assume, for example, as economists frequently do, that the businessman wishes to maximize profit, (that is, we assume profits are things "we like to increase"), what shall we say if the profit turns out to be a loss? Shall we say that the quantity obtained by subtracting outlays from revenues is a benefit if it turns out to be positive, but a cost if it turns out to be negative? Must we know the actual consequences before we classify them as costs or benefits? Since cost-benefit analysis "is intended to help us choose among alternative means to our ends"** there can be no point (for choice purposes) in differentiating between costs and benefits unless we can do so before the consequences of our actions are known.

---

*Op. cit.

**Op. cit., p. 25.

Further, even if major problems of uncertainty are absent, it is difficult to tell a cost from a benefit without a program. If we are comparing two social work curricula, within the framework of a systems analysis, and one requires the student to undertake more hours of private study than another, should we describe the additional hours as a cost or a benefit? If one has a residence on the Mason-Dixon line, and is assessing government policy with regard to desegregation, is it clear whether a decrease in the proportion of desegregated schools is a benefit or a cost? It is possible, of course, to take the position that there is a personal element to be reckoned with in determining what constitutes cost, and this is consistent with the reference to "sacrifices," but what are we to make of statements like the following: *

> "What, then is the right way to measure cost?...the use of money costs is better than the use of other feasible measures when there is time to acquire more inputs and reallocate resources...In a reasonably competitive system, prices tend to reflect costs, i.e., the worth of inputs in other uses or...the gains that must be given up if the inputs are withdrawn from present use." (p. 43)
>
> "The measure of cost--what the whole economy must give up--is what the new producer has to pay to attract the inputs away from alternative uses." (p. 149)

Note that the concern in these last statements is with a concept of "objective," "market," "societal" costs, which is surely at variance with the concept of costs as negative effects "we" like to decrease.

We have discussed McKean's cost concepts at some length not because McKean is particularly vulnerable, but because, to the contrary, it is probably the best work available in the field, and describes a valuable new line of thought. Without, however, going into the more esoteric cost problems of systems analysis or cost-benefit analysis--for example, which of the cost effects should be counted in evaluating alternatives--it seems clear that the conceptual guidance provided by that discipline on the subject of costs is, at best, uneven.

Systems analysts have introduced the important new idea that costs can be viewed as those consequences of decisions which we would like to do without. Because of uncertainty about consequences, this may mean that costs can be identified, if at all, only in retrospect, so the concept may not be really useful for making choices. Nor does the

---

* Op. cit.

insight appear to have had any significant impact on proposed measures of costs.

3. A Decision-Theoretic Approach to the Cost Concept

At this point it seems to be highly desirable to try to pull together and reconcile the various strands of thought about cost, since otherwise it would appear that anything which might be done about social work education costs would be totally arbitrary. Actually the appraoch we shall propose seems to be capable of integrating all of the views previously presented, so that each view, under certain specifiable conditions, seems to be reasonable and defensible from a common philosophical position. The basic posture we shall adopt is one which is consistent with, if not suggested by, the Government's request for proposal when it states that the methodology to be developed is "to assist the school of social work and the parent universities in planning their future and managing their expenses and to assist SRS in budgetting and program planning activities." Since the experts have not told us, at least in a satisfactory way, what "cost" should mean in general, we must try to determine what properties the concept should have if it is to assist the schools and SRS in management, planning and budgetting activities.

In what way can cost information be of assistance to the schools and SRS? Like any other (new) information it would, presumably, be useful to the extent that it improved understanding: this is essentially the view that knowledge is an end in itself, and provides no basis whatever for discriminating between concepts--a form of discrimination we endorse. Indeed the only instrumental role we have been able to think of for cost (or any other) information is that of influencing actions; that is, it must satisfy the weak requirement of being able to influence the choices made. Once again, however, any information--quite literally--might satisfy that requirement. To discriminate between alternative concepts of cost we need to have some way of identifying "more useful" and "less useful" information in situations of choice, or at least some way of thinking about the problem. In the process, perhaps we can find some way to differentiate "cost" from "other" information. It may be useful, therefore, to examine some basic decision-theoretic ideas.

Information, if not an end in itself, is useful only because it influences our choices. To determine what (cost) information is most useful--to select a cost concept--it is helpful to look at the fundamentals of choice situations.

Fundamentals of Choice Situations. Deliberative choice situations (excluding from consideration such questions as whether one "should" yelp, or bleed, upon being jabbed with a pin) seem to involve certain common elements, which we consider in turn.

First, choices require decision-makers, who are assumed to be individual human beings. Each human decision-maker can, in principle, be characterized in terms of fundamental attributes which will influence the choices he makes, so that we do not expect two decision-makers, faced with the same information, to make the same choices in general. It is an obvious fact that, in a restaurant, not everyone orders eggs for breakfast, yet it is an equally obvious fact that many will be influenced by information that the available eggs are imported from China. Another way to say this is that we do not assume that any two individuals, even two who were selected because of their similarities, would necessarily make the same choices, but, nevertheless, choices depend on information. We shall have occasion to return, later in this study, to a discussion of the nature and characteristics of decision-makers, but for the moment we can think of a decision-maker as being, say, a professor of social work or a Government official with programmatic interests in social work.

In addition to decision-makers, decisions necessarily involve some freedom of choice. If we really believe that there is a situation in which someone has "no choice" there is simply no decision to be made. Hence we say that decisions involve "alternatives"--courses of action which can be consciously weighed. For example, a professor of social work might have to choose between advising students on a particular day and preparing a paper.

Sometimes it is said that an alternative always is to "do nothing," but, unless it is obvious what this really means (e.g., playing golf, sleeping, etc.) the description is not useful. As the words imply, a course of action may describe anything from the instantaneous act of pressing a button to a sequence of acts extending for many years into the future; although we conceive of decision-making as a continuing process. We also describe courses of action as alternatives, because we think it is most useful to formulate them as being mutually exclusive; that is, if one can choose A or B, or both, we describe the possible choices as A, B, or C, where C happens to mean "both," and where A, B, and C are then mutually exclusive alternatives.

We assume that deliberative, conscious, rational decision-making involves the concept of outcomes or consequences. If, for example, a professor decides to seek a research grant, and is successful, he can say, from his point of view, that receipt of the research grant was a result or consequence of his course of action. So, too, was the time he spent in preparing the grant, the effort expended in typing it, and the money collected by the Government for postage. The application may not be successful, of course, and this must be viewed as a "consequence" as well. Hence, in making his choice, the decision-maker is assumed to look, so far as he is able, at the possible consequences of his action. If one outcome is considered more likely than another by the decision-maker, it is assumed that these views are relevant to the choices made; that is, he uses the concept of probability of an outcome.

Finally, a decision-maker can be characterized by his preferences. It is assumed that, given any set of alternative courses of action, a decision-maker can always make statements of the form "alternative A is preferred to alternative B which is preferred to alternative C..." for all of the available alternatives. A decision is, for our purposes, merely a statement by a particular decision-maker that alternative X is the best of the alternatives. Note that nothing is assumed about the availability of information about consequences, although the alternative courses of action are assumed to be known. In many situations an alternative which is available is to seek additional information about consequences before making a "decision," thus, in effect, saying that the preferred course is one involving new data collection. There is, however, no such thing as information which is "required" for making decisions.

Rational, deliberative decision-making is viewed as involving the following basic elements: (1) a decision-maker, who is an individual human being with individualistic preferences; (2) some freedom to choose between mutually exclusive courses of action; (3) the relevance of the foreseeable consequences, and of their respective probabilities of occurrence, to the choices made; (4) the ability of the decision-maker to rank the alternatives in order of preference, for any given amount of information.

Some Hard Questions About the Fundamentals. There are a number of hard questions which are implicit in the foregoing sketch of decision fundamentals. To answer these questions with any completeness (if they can be answered at all) would take us far afield, but it may be helpful to suggest the nature of the possible answers.

It is easy, of course, to illustrate what an "alternative" is or what an "outcome" is, but it is quite another matter to define them in any general way--even, strangely enough, in a way which distinguishes them sharply from each other. Consider, for example, the choice between admitting 100 students to the MSW program next year, and admitting 125 (ignoring all other possibilities). Suppose the number selected is 125. It may turn out, nevertheless, that the number of qualified applicants is less than 125, in which case it is reasonable to inquire what was really "decided." In such a case we would tend to say that the alternatives had been poorly formulated, because it might have been better, at least for some purposes, to say that "100" and "125"--and anything in between--were possible outcomes of a decision to "admit all qualified applicants up to 125." In this framework "100" and "125" are not decision alternatives at all, but uncertain consequences of a single course of action. On the other hand, if, for the same school, the single course of action had involved "up to 100," it would not have been apparent that there might be a formulational problem.

There is a simple principle which can cover this situation. In order to "choose" between A, B and C, all three must be available "with certainty" to the decision-maker. Under most conditions it does not make much sense for a bettor at a horse race to say that he is going to bet on "the winner," because ordinarily that is unknown in advance; but it may be useful to say that there are seven horses in the race, and that, with $2 to bet, there are seven alternatives. In practice, of course, certainty is not a property of this world, so when it is said that decision alternatives must be available "with certainty" it must be understood to mean "for practical purposes." By the same token, consequences should be viewed as uncertain, since, if they are viewed as certain, there is a logical and practical equivalence between alternatives and their outcomes. (To choose an action would be to choose a particular outcome.)

Obviously, then, when we speak of practical purpose, we must exercise judgment to distinguish between alternatives and their consequences. Such judgments are necessarily influenced by the general state of our information and understanding, so that what it is useful to call "outcomes" today may be tomorrow's "alternatives."

Another difficult aspect of the problem is this. There is nothing in the decision fundamentals which bears on the question of where the "alternatives" came from, since a decision problem begins with given alternatives. Indeed, even if we assume--as we do--that there is a given "state of information" for a given individual at a given time, we are not in a position to say, in general, that the alternatives are fixed, because there is always a possibility of a new idea. In simple situations, e.g., playing a bridge hand, it is sometimes assumed that there are only certain specific alternatives available (e.g., at the beginning of play, only thirteen possibilities for a given individual). In practice, even in bridge, the possibilities are limitless, especially if one does not feel constrained by the formal rules. It is never possible, therefore, to say with propriety that a given course of action is the best in an absolute sense, but only, at most, that it is the best of some specifiable subset, such as "all the alternatives examined."

Further, there is nothing in what has been said to indicate in what terms either alternatives or outcomes "should" be expressed. For example, if a student is making a choice involving graduate education in social work, should the alternatives be stated in terms of School X versus School Y, say, or in terms of courses A, B, C...at School X versus courses L, M, N...at School Y? Similarly, in what terms should the consequences be described? Should he differentiate the "quality" of his education in the two cases, the probability of successful completion, the contact with well-known professors, the cost of living, the availability of girls, the ability to obtain all the news that's fit to print?

Since we have already indicated the impossibility of definitive identification of alternatives, we can view these considerations as mere reinforcement of that view. Outcomes are, however, another matter. It is easily possible to specify some attributes of the consequences which are of great concern to the decision-maker, while others matter not at all, if we know enough about the decision-maker. For example, he may not read a newspaper but be very fond of girls, or vice versa. He may like to live dangerously, or he may not. Everything in the area of outcomes depends on the decision-maker's tastes--what matters to him may or may not matter to others.

The final general difficulty we wish to discuss here relates to the concept of preference. Decision-makers can, and sometimes do, choose between alternatives, without having knowledge of, or even having had time to assess, their respective consequences. It follows from this that the alternatives themselves must have intrinsic "values" associated with them, at least in such cases, and that they cannot be viewed solely as means or instrumentalities toward the achievement of consequences or outcomes for which preference can be expressed. On the other hand, there is no denying the relevance of consequences for choice--as we discuss later in this report. Therefore, when a course of action is "preferred," it must be interpreted to mean that it is the whole sequence consisting of the course of action and its possible outcomes which is preferred to some other whole sequence.

Alternative actions must be viewed as available with practical certainty, but consequences, if they are to be differentiated categorically, must be viewed as uncertain. The identification of particular alternative actions is often a creative (or non-analytic) act, so that no analysis can ever show that a course of action is absolutely best. The attributes of outcomes which matter depend on the tastes of the decision-maker. The choice of a particular alternative by a decision-maker is assumed to mean that he prefers the entire combination of the action and its outcomes to any other combination examined.

The Role of Information. Information does have a role, as we have suggested, in influencing the identification of decision alternatives, but that role is obscure (that is, cannot be formalized), and is, perhaps, rather unimportant on the whole, in the context of cost information about social work education. Actually the information contained in this report (e.g., on uses of faculty time) does "suggest" to us that certain kinds of actions be considered, although it cannot be claimed that it was impossible to conceive of such action without the information in question. In any event, since our task is to assist SRS and the schools via some cost information (ultimately) we can perhaps ignore the role of such information in identifying alternatives.

What, then, is the role of information in decision-making if the alternatives are given? The answer is, of course, that it must help throw light on the outcomes--their nature, and/or magnitude and/or probability of occurrence. Thus an absolutely minimal requirement for identifying information which is relevant to the choice is to know what alternatives are being considered, by whom, and what things matter to the decision-maker in making his choice. The decision-makers with whom we are concerned do have some things in common, of course, since they are human and have similar cultural backgrounds, but there is no reason to assume that the choices available to them are the same or that the things they value are the same.

Not all things matter equally, of course; that is, the decision-maker can more readily accept ignorance about some things than others. Hence it may be possible, at times, (for someone other than the decision-maker) to say that certain information is "more useful" than other information to the decision-maker. Perhaps the most important practical illustration of this occurs when variables are viewed as merely instrumental. Thus an entrepreneur may be interested in receipts and expenditures only because, through them, he can estimate profits; so that, under these conditions, it is clear the "profit" information would be more useful than either receipt or expenditure information, and might even substitute completely for them. Similarly, a decision-maker who is interested in the "product" of a school of social work education might like to think in such romantic terms as the reduction in broken homes or minds, but might be willing to settle, more practically, for the numbers of Ph.D's and MSW's it produces. We shall refer to such variables as "intermediate," in the sense that they may be thought of as playing an intermediate role in the causal chain from action to the outcomes which "really" matter to the decision-maker. The most common examples of intermediate variables occur in building models, in ways and under conditions which are unknown to the decision-maker; as, for example, when he requires, say, an estimate of the number of MSW's to be produced next year, but has no interest in the information on which the number is based (e.g., individual estimates for each school).

Information must have a role in the formulation of alternatives for choice, but that role is obscure and cannot be formalized: otherwise we could describe how to innovate. The only formal role of information, in assisting SRS and the schools, is to help assess the consequences of given alternatives. This information includes information which plays an "intermediate" role in linking actions to the consequences which matter to the decision-maker.

Distinguishing Cost and Other Information. Obviously there is nothing in these ideas on decision-making and information which makes it necessary or even useful to distinguish cost information from benefit information. Still, since we have been directed to study costs, we adopt a cost concept consistent with the foregoing ideas. We view costs as an arbitrarily or conventionally selected subset* of the consequences of an action; and, with this view, every concept of cost previously discussed can be justified under some conditions, i.e., for some decision situations.

Moreover, the basic decision-theoretic ideas discussed here apply strictly to individuals, so that even if there were a general definition of cost which permitted us to ascertain, from each individual, what outcome factors are of interest in his decision-making, and which ones are costs, how could we apply these ideas to organizations such as a "school" or "SRS"? To satisfy organizational rather than individual concepts of cost information, we are compelled to view cost (and other decision-oriented) information as being the subject of organizational dialogue, and thus must be viewed as having a conventionally determined content. Individuals must be willing to admit (or claim), at least within their own organizations, that a particular factor matters and is a "cost" before we can so regard it. Hence the only real candidates for inclusion in what we will call costs are decision consequences of a relatively impersonal and frequently discussed kind, determined largely by current mores.**

---

* Note that even the McKean concept, "negative effects we like to decrease," also fails as a generally useful definition because the same variable may change its character (from cost to benefit) depending on the values of other variables; e.g., student enrollment may be "good" with adequate staff, but "bad" otherwise.

** Implicit in this statement is a rejection of the position that there is, for Government decision-makers, a unique measure of the total cost to society of a particular action, and that this measure has the property of promoting an overall societal optimum. This position has been taken by many economists, but a consideration of it would take us too far afield.

It may also be important to note that the current mores usually incorporate state-of-the-art considerations, which may dominate any differences in basic concept.

Given the interests expressed in the request for proposal (managing, budgeting, etc.) and our view of costs as a conventionally determined subset of consequences of decisions, it seems reasonable to define costs as organizational expenditures of money (actual or potential) which result from actions taken by SRS and/or universities relative to graduate social work education. This also seems completely consistent with the specific requirements of the request for proposal.

We need not identify factors as either costs or benefits for decision-making, and cannot do so on any sound general conceptual basis, even for individuals. The distinction is arbitrary, so we adopt a cost concept which has much in common with conventional views, and which may therefore be most appropriate for "organizational decision-making." This concept involves predicted dollar expenditures by universities and/or Government for graduate social work education.

4. Cost-Estimating Relationships

The request for proposal called for the development, in the national study, not merely of cost information, but of cost-estimating relationships. Cost-estimating relationships are assumed to be, simply, models for the prediction of costs, and, if costs are viewed as consequences of decisions, then they may be viewed as models for relating decisions to expenditures.

Suppose, then, we identify a simple decision question which might face a school: to hire or not to hire an additional faculty member. It would be relatively straightforward to estimate future expenditures, but, on the other hand, it is hard to see what function this would serve from a decision viewpoint. Further, the request for proposal clearly implies an interest in consequences which would not, conventionally, be classified as costs; e.g., the number of Ph.D's produced. Such variables would tend to be classified as "benefits," or, perhaps more neutrally, as "outputs." Thus, in the national study, we must try to relate decisions or choices to outputs as well as to expenditures.

Cost-estimating relationships can, of course, be viewed perhaps more simply as relationships between expenditures and output measures. In situations where the decisions of interest do not include changes in the production process, and it is reasonable to "decide" to change the output, this concept of a cost-estimating relationship may be perfectly adequate. It should be noted, however, that there is nothing in such a relationship (even though it may be solid) which suggests how the output is to be achieved, or the objects for which funds are to be expended.

With either formulation of the concept of cost-estimating relationships, although the study is addressed to "cost factors," it could just as well have been described in terms of benefit or output factors. The basic problem appears to be symmetric: to determine, if an action is taken (by the Government or a university), what the resulting expenditures will be, and what will be achieved in terms of educational output. To answer such questions it is necessary to understand the process of graduate social work education.

A cost-estimating relationship is perhaps best viewed as a pair of models, one relating choices to expenditures, and the other relating choices to output. The study is basically concerned, therefore, with the social work education process.

The development of cost-estimating relationships is viewed as requiring the following steps:

(1) We must identify the decisions of interest. This means that the relevant decision-makers must be identified clearly. It also means that we must do our best to foresee the range and kinds of choices which will be open to them for serious consideration. A too narrow specification would mean that there is a good chance that the findings will, in fact, be useless for the real situations which may arise while a too broad specification could make the job impossible within reasonable bounds of accuracy, time and money. At the extremes the answers are obvious, but there is a very broad middle ground, well-illustrated by the area of emerging educational technology.

(2) We must identify the input variables, or factors controllable by the decision-maker, which are capable of representing the decisions to be made. Thus, we might describe a possible Governmental choice as being to, say, double the number of Ph.D's, but, from a research standpoint, this must be turned into the specification of action variables, e.g., number and size of grants to students or to institutions, or the policies and procedures under which they are granted. Similarly, even knowing the decision areas which are of interest to a school administrator does not automatically or unequivocally identify the factors to be viewed as controllable. The significance of the step being discussed here is that upon it will depend the specification of the "independent" variables of the cost-estimating relationships.

(3) We must specify the cost factors of interest. Generally speaking, any action taken by the Government or by a school administration will have many types of cost impacts. For example, there are "costs" to students of actions by the Government or school administrations, such as longer or shorter hours, higher or lower grades, education of higher or lower quality, and so on. The fact that these costs may be severe and real and even, in some cases, capable of being represented by dollars, does not necessarily imply that they should be encompassed by the current study; but they should not be omitted by oversight.

(4) We must specify the "output" factors of interest. It is not the intent, in the current project, to study "quality" of education. On the other hand, we take it as axiomatic that the purposes of the study cannot be met unless we can also say, in sound terms, what will be obtained for the costs incurred. These two considerations suggest that the output factors should be those which can be obtained relatively simply, obviously and unequivocally, without entering into the question of what "really" constitutes "performance" in education. We believe, in other words, that output measures, such as number of Ph.D. graduates, number completing continuing education courses, etc., are indispensable in a cost-oriented study even while we concede their inadequacy in the context of a performance-oriented study.

(5) Given the decisions and measures of interest, as specified in the foregoing, we must define the variables of the required input-output and input-cost relationships, and obtain the corresponding data. Many questions arise at this point about how such data are to be obtained, manipulated, and interpreted. At the moment we merely note that this is the final, logical "step" in obtaining cost estimating relationships, and defer discussion of its content.

C. DEVELOPMENT OF AN APPROACH

In the initial stages of the study an approach was developed and a document prepared which depended on the foregoing cost and decision concepts, and on the appraisal of certain fundamental study problems which could be anticipated. The remainder of this chapter is a shorter version of that document, which was initially distributed to the Liaison Committee. Our object in presenting this material is to assist us in describing what we regard as the most important finding of the study, and we shall do so, in part, by contrasting our present views with certain views which are implicit in our approach below.

1. Foreseeable Study Problems

The Pilot Nature of the Study. The problem of concern is not the relatively straightforward one of providing cost relationships for a small number of schools, each of which could be studied as exhaustively as necessary. The problem is really one of drawing inferences, from the study of a small number of schools, about how to conduct a larger-scale effort, and this has significant implications for how the pilot effort should be conducted.

To see what is involved we construct a simple--perhaps oversimple--illustration. Suppose that we have selected a university, A, for inclusion in the pilot effort, and we find that, over the period for which relevant numerical data are available, there have been no expenditures for new construction. Furthermore, the university has had difficulty in obtaining capital for such purposes, and is not contemplating any significant moves along these lines. Now, under these conditions it would still be quite feasible for the university to, say, increase the resources it devotes to social work education by, say, shifting resources from the production of teachers. The limitation on building is not in itself an effective bar to action by the university, if an increase in the number of social workers were an aim.

Now one of the implications of the conditions we have specified for our illustration is that, so far as the university's decision re social work is concerned, the cost of new construction is, quite simply, irrelevant: we could produce cost functions (estimating relationships) which would be perfectly adequate for that university's decisions in the social work area without mention of construction costs. On the other hand, there is no reason to believe that universities in general are in this situation, and relationships developed for university A would have no claim to general applicability; e.g., we could not claim that construction costs should be ignored for all institutions.

The problem of studying cost relationships on a pilot basis is clearly a very special kind of problem, then. Assuming we can outline the major conceptual steps in achieving appropriate cost relationships for any given institution, how are we to contribute to the solution of the problem of obtaining cost relationships for all institutions, if we ourselves can study directly only a few of these institutions?

The practical considerations are complex. To begin with, we must collect and analyze data, in the pilot effort, on a much more detailed basis than would otherwise be necessary. For example, we might separate out a function called "admissions" and study it separately. We might find that, in university A, the

the costs associated with admissions depend in a simple way upon the number of applicants, e.g., X dollars per applicant. If the category of costs (in this case admissions costs) is elemental enough, we can anticipate, perhaps, that admissions costs at university B will also be capable of being characterized in the same way; e.g., Y dollars per applicant. Now if this should prove to be true in all institutions in the pilot effort, the structure of that part of our data collection, following completion of the pilot effort, becomes relatively clear. We would simply specify how to obtain X, Y, etc., and collect that information from respondents. Thus, by appropriate processing, we could characterize the admissions costs incurred by each institution, not as a constant, but as a different multiple, for each institution, of the number of applicants for admission.

Alternatively, after we had collected data from four institutions on admissions costs, we might find that, if appropriately defined, the differences between institutions appear negligible, and this would have significant implications for the national data effort. Or we might suspect, based on results from our sample of institutions, that there is a more complex model than was first postulated--e.g., admission costs depend on both number of applicants and number of admissions--and this seems capable of providing an appropriate structure for the national data effort. Finally, we might decide that "admissions cost" was too detailed for the national effort.

Our pilot effort must thus be devoted, to a large degree, to

(1) the development of cost relationships for each of the institutions studied;

(2) the exploration of the differences between the cost relationships for the institutions studied, resulting, possibly, in a recategorization of costs to achieve homogeneity of relationships and simplicity in subsequent data collection;

(3) the tentative structuring of cost models which cannot be inferred from the experience of any single institution, but which may be suggested by five institutions (and confirmed or rejected or modified by the national study).

Procedurally, we think it makes sense in these circumstances to proceed from the specific to the general; i.e., to begin with one school and develop elemental cost relationships for that school; to go on to the second and develop elemental cost relationships, and similarly for the third, fourth and perhaps fifth; to aggregate or combine these relationships where it appears to be justified by the pilot effort, so that the total (national) data collection task will be no more complicated than necessary; and to suggest relationships which can only be validated by the national data effort (or, at least, by a larger sample) as well as the means of validation.

Selection of Schools for Pilot Effort. Whenerver there is a pilot effort the question of sample selection is a potentially important one. Ordinarily what one seeks in a sample is, of course, the quality of "representativeness," but since the sample is not the whole and cannot be assumed to be completely representative in every characteristic, it is necessary to try to choose the qualities deemed most important. For present purposes, it is clear, the dominant quality which should be sought in the pilot effort is representativeness of the difficulties which will be encountered in the national effort. In other words, what we want, in selecting the pilot schools, is to be able to anticipate as many as possible of the difficulties of the national effort, and to find ways to solve them. Of course, if we knew of a difficulty which was unique to a particular school we would not necessarily put that school into the pilot effort, for to do so might mean rejecting another school with problems characteristic of a dozen other schools.

We want, then, to get as complete coverage of problems as can be done with a sample, of, say, four schools. The kinds of problems which may be pertinent include the following:

(1) There may be an enormous range in the quality and quantity of data, as between various institutions. A national effort geared to data which are generally unavailable could be disastrous.

(2) There may be an enormous range in the things which have been tried in various institutions and which may be of future interest (e.g., programmed instruction). The schools selected should have, in their experience, as many as possible of the courses of action which might be viewed as important for future decision by the schools, or for future Governmental support.

(3) There may be wide ranges in fundamental policies and procedures --curriculum, faculty, admissions, graduate versus undergraduate, masters versus doctoral, research, etc.

(4) There may be important gross differences--size, sources of funds, relative importance of the social work activity, differences in fundamental objectives--between universities, which may have to be taken into account.

Since we cannot say, with any precision, what the characteristics of the population are, or how the selection of pilot study schools should be carried out, we should be prepared to find, after the completion of the pilot effort, that we might have done better by a different selection. We should also be prepared for two other sorts of eventualities: (1) it may be desirable to sample further for particular areas of problems; and/or (2) it may be desirable to settle for a sample--rather than a complete "census"--of the relevant population. Perhaps it will be unavoidable, in other words, to view the initial effort as being "exploratory," to some degree, rather than "pilot," with the broad nature of subsequent activities not yet completely determined.

Deficiencies of Accounting Data. We take it for granted, based on experience, that routinely available accounting data will be far from sufficient for the construction of decision-oriented cost estimating relationships. Consider a simple illustration. Suppose we wish to know what it will cost to expand the curriculum in a particular school (e.g., to offer a concentration in community organization), and that we have careful, detailed accurate accounting data which actually show the historical costs associated with each element of the past curriculum. We may even imagine that we have data which are free from the accountant's imputations or allocations.

What should be the appropriate use of such data? What would be their implications? We note that the decision is not one of mere replication (and it seldom is), since the courses in question have not been in the curriculum. Do we then assume that the cost per course or group of courses, or, perhaps, per pupil, will be the same as for other courses? But which other courses? And why?

The fundamental problem is not, however, one of developing accounting data, or even of interpreting them correctly. What we want to know is: what will it cost to expand the curriculum in a given direction? To answer this we want first of all to know what will be done to expand the curriculum. Does it mean adding a course to the workload of an existing faculty member, possibly even at the expense of some other course? Does it mean a part-time, new, faculty appointment, or, perhaps, the establishment of a totally new department? Does it require special facilities, e.g., a special library? Does it imply new classrooms, or longer use of existing classrooms and somewhat higher janitorial and other maintenance services? The costs will be determined not by the specification of what is desired (even if accompanied by dependable historical data), but by the specification of what will be done. There are classroom costs, new department costs, etc., only if and when we decide to incur them: they do not necessarily follow from a specification such as that involved in the expansion of curriculum.

But how are we to determine what will be done? Once we have defined the kinds of courses of action to be evaluated, e.g., grants for field instruction at the graduate education level, our first task must be to identify, for each of the pilot institutions, the specific courses of action which would be taken in response to various hypothetical situations. By asking appropriate questions we might be able to obtain answers concerning costs of curriculum expansion, because we would be told, "We would, under such and such conditions, add n faculty members of a certain grade, add m classrooms, etc.," so that the "cost" problem would boil down to the perhaps trivial one of applying appropriate unit prices for each faculty member, classroom, etc.

Now it is of interest to note that the data just described in no way depend on accounting data! We view the accounting record as a potentially valuable source of information--in some cases perhaps the only acceptable source--but it is and must remain a secondary factor when more direct evidence can be obtained as to administrative decisions or behavior. If adequate non-accounting data are obtainable (by interview) from the pilot institutions, the available accounting data are not likely, in our judgment, to constitute a serious drawback to the conduct of the project. Cost relationships can be synthesized from other sorts of information, and, in that case, a principal function of the accounting data may be as a check on the goodness of the synthetic cost models.

Our research strategy or formulation has been selected to maximize the chances of an output which is inherently useful and will also contribute to the anticipated national effort. We believe the problem should be viewed, first of all, as one of developing appropriate cost-estimating relationships for one school. When this has been done (1) we will have learned a great deal about the problem of generating cost-estimating relationships in the kind of situation of interest; and, (2) we will have a useful set of relationships for that school. When this has been done for four schools we will have a basis for extrapolation; but, more importantly, we will be able--with luck--to define the factors which must be measured, and the methods of measurement, if comparable relationships are to be developed for other schools in the national study.

2. Technical Approach

In the paragraphs which follow we have laid out the elements of our approach. Although they may appear to represent a logical, straight-line sequence, we do not wish to imply this property. In actual fact all of the steps identified will probably be going on, to some degree, throughout the project, with continual feedback from one activity to another. The following activities are planned:

Identification of Government and School Decision Problems. Cost-estimating relationships to be meaningful and useful, must be capable of being related to the decisions to be made. In other words, we must be capable of describing the alternatives (choices) which will be considered by the decision-makers. To be sure, since the decisions lie in the future, there is an element of uncertainty about them, but the study cannot be useful unless we can anticipate them reasonably well. In principle, since the actions to be taken by the Government are determined by legislation, it is possible to infer from that legislation, and from publicly available program descriptions, grant procedures, etc., some of the possible courses of action, but it seems safe to assume that mere consistency with legislation or even with administrative rulings does not mean that a possibility should be taken seriously. The efficient way to identify Government decision problems is, clearly, through discussions with SRS personnel, since it is the choices which will actually be considered which require identification.

The results are also to be useful for planning by educational institutions and social welfare agencies (where the latter are pertinent), so it is necessary to identify the decisions of interest for these decision-makers. We stress that the decisions actually open to these decision-makers are not necessarily directly or unambiguously related to the phenomena of interest to the Government. For example, the Government may make decisions about payment or reimbursement of graduate tuition expenses, whereas the related planning decision may concern, say, the hiring of faculty members in anticipation of a given enrollment, curriculum, and so on. As in the case of Government decisions, the best way to identify the relevant decision questions is by discussion with the decision-makers involved. In the end it could turn out to be necessary to deal with something less than the full spectrum of possible decisions.*

Selection of Pilot Schools. We have discussed earlier the kinds of criteria which we believe to be pertinent in the selection of schools for study, and these will not be repeated here. We merely add that, given our current understanding of the scope of the effort, it seems to be imperative that at least one school be selected that provides field instructors on its own staff and at least one school be selected that uses agency personnel as field instructors.

Again the effective way to proceed is via discussion--in this case with the Council on Social Work Education and/or the Government--in order to make maximum use of the knowledge which already exists relative to the characteristics of schools which might be selected for study. We also assume that the Council will assist in establishing working relationships with the schools selected.

---

*It was apparent early in the project that only minimal attention could be given to agency problems, but we believe that the approach presented later is adequate from the standpoint of education. It should also be pointed out that it was determined by SRS, later in the project, that emphasis should be placed on the needs of schools during this pilot study.

Identification of Controllable Variables. The construction of useful cost-estimating relationships requires that the controllable variables or input factors be related, via two distinct sets of relationships, to (1) dollar measures of costs, and (2) measures of output or (nonqualitative) performance.

These input factors must be variables which can be completely controlled by the pertinent decision-makers, (Government, school or agency) or which bear a one-to-one correspondence with such controllable factors. A quantitative factor controllable by the Government might be described by, say, the number of grants of a given type, while an input controlled elsewhere might be, say, the number of new faculty appointments in social work education.*

Obviously the identification of these factors is closely related to the decisions to be made, but does not flow unequivocally from them. For example, there may be a potential decision about whether or not to offer a doctoral program in a given school, but it is not immediately apparent what actions, or even specific choices, are implied. How many--and which--specific courses are to be considered? How many faculty members? Does it imply a new department? We believe that the required factors can be elicited via (1) consideration of the previously identified decision areas, and (2) informal discussion with senior decision-makers.

Identification of Cost and Other Outcome Variables. We have been told that "the focus of the study is on all costs of graduate social work education regardless of source of funds." We have also been told to consider "the direct and indirect costs that must be incurred by the school and by an agency giving field instruction regardless of how these costs are reimbursed or by whom." On the other hand, the study is not to include "'opportunity' costs such as the salary of the student that is foregone while he attends school or the higher income or lower costs that the school might have incurred if another type of education had been undertaken instead of social work." In addition, the Government has expressed its interest in "(1) the total costs for graduate education of social workers which will include costs to the school and in some cases costs to social welfare agencies providing field experience, and (2) all costs incurred by the graduate school of social work." The general nature of the Government's interest is clear. What is really at issue is the question of what resources are utilized in the course of graduate social work education.

---

*We are well aware that controllable variables may actually differ in degree rather than in kind from other variables, but differences in degree are the essence of the distinction between passable work and good work.

There are, however, more detailed questions of the identification of cost variables which need to be resolved by discussion with Government personnel. For example, do decision-makers care about the distinction between "direct" and "indirect" costs? Do they care about the breakdown between "capital" costs and "operating" costs, or between "school" and "agency" costs? The fact is that these distinctions may or may not be pertinent to the choices to be made, for their pertinence may depend principally on the values and judgments of the decision-makers.

Resource utilization (dollar costs) are not the only required measure of the results of variation in the controllable variables: we need physical measures of output as well. While it is easy to make a start at this--e.g., number of Ph.D's, number of Masters' degrees, etc.,--it is our judgment that this step is best carried out in conjunction with the Liaison Committee of the Council on Social Work Education.

Structuring the Social Work Education Process. At this point the task is to generate two sets of mathematical or statistical relationships, of the kinds just mentioned. We want to be able to answer two kinds of questions: (1) if we take action X, Y, or Z, what will be the implication for dollar costs (resources use), and (2) if we take action X, Y, or Z, what will be the implication for output (performance)? This activity is really the heart of the study effort.

Although the analogy may appear farfetched or harsh, we can view the graduate social work education process as an ordinary production process, such as that required to produce furniture. To study such a process we must first break it down into simpler and more basic units, each of which, hopefully, it will be possible to describe (mathematically) in a more or less independent fashion. To illustrate: there are teaching functions, administrative functions, service functions, research functions, and so on. Each of these can, in turn, be broken down into still simpler units: for example, administrative functions might be defined to include admissions, fund raising, grant administration, and so on.

Obviously there are a very large number of ways in which the educational (production) process can be described, each involving a different sort of breakdown. The nature of the breakdown which is desirable depends on a number of considerations, of which the most important is the character of the previously defined outputs and inputs. There might or might not be a point, for example, in separating out (say) research activities as a distinct part of the educational process, depending on what inputs and outputs are viewed as most pertinent.

In addition, however, the appropriate breakdown depends, to some degree, on the nature and quality of the available information, on the complexity of interrelationships, and on the quantitative significance of the elements under consideration. If, for example, a given institution always utilizes faculty members for both graduate and undergraduate instruction, we might find it necessary to treat, say, the "number of graduates trained" and the "number of undergraduates trained" as joint products of the employment of faculty members--i.e., in that instance, there might not be any sound way, conceptually, to treat graduate and undergraduate education per se. Clearly, the matter of appropriate subdivision of the educational process is not an easy one.

The effort to structure the social work education process, a continuing one, will be accomplished initially via (a) discussions with the Liaison Committee of the Council on Social Work Education, (b) discussions with senior administrators and educators for the schools selected, and (c) study of the readily available information. The meaning of "readily available" information will become clearer as we proceed, but is defined to include information on policies and procedures as well as numerical data.

Nevertheless, there is a general rule of thumb we propose to employ, in order to maximize the potential usefulness of the pilot effort for the subsequent study. We believe that the educational process should, in the pilot effort, be split into as many separate parts as can be done meaningfully, where each "part" is conceived as involving the use of some group of resources with definable, measurable, inputs and outputs. If the elements or parts are basic enough one may be able to view each school or educational process as consisting of some combination of these elements, so that, ideally, it would be possible to characterize all of the schools in the pilot study in the same basic terms. If this turned out to be the case there would, obviously, be a solid foundation for the national effort.

The nature of the educational subprocesses to be identified, and of the mode of describing them, may be of some concern. Suppose, as suggested earlier, we were to identify an "admissions" function, based, perhaps, partly on the observation that there are identifiable individuals concerned with admissions, that there are certain other facilities assigned for this function, and so on. We might choose (if the admissions function were relatively narrowly defined) to describe its inputs in terms of numbers of clerical and professional personnel, respectively, in terms of amount of space, equipment, supplies, and so on; while the outputs might be number of applicants accepted and number rejected. We would really, in other words, be studying the productivity of resources devoted to the admissions function. Our mathematical relationship would then be addressed to the question: How does the capability to handle admissions (acceptances and rejections) vary with staffing, facilities, etc?

Sources of Quantitative Input-Output Data. The question now is: where are these input-output data to come from, and how are they to be collected? We believe that most of these data will turn out to be readily available in university records--provided that the information sought is not of an extremely detailed nature. To see that this is so we identify a few of the obvious items of input-output data which are likely to be sought: numbers of teachers, assistants, etc.; number of students in each class; classes assigned to each teacher; number of administrative personnel, by type, in each major office (e.g., admissions); space utilization for each course, and for other functions; light and heating requirements; number of grants, by type; number of personnel involved in the administration of grants.

Consideration of these items suggests that much of the foreseeable input-output data requirement is likely to be met from Controller or Bursar, Registrar and School/Department records. We also note that a great deal of information about what is likely to be by far the most important type of cost must be available in payroll records, in such a form that data on physical utilization can be obtained--no matter how they may have been processed for accounting purposes. The corresponding "method" of data collection is, of course, to establish working relationships with these data nodes, utilizing the advice and good offices of the Liaison Committee to establish these working relationships.

It would be foolhardy, however, to assume that there will be no need for other methods of collecting input-output data. Consider, for example, the data area identified earlier, namely, university procurements. We would not be at all surprised to find that it is extremely difficult, and perhaps impossible, based on existing records, to measure the number of procurements, say, generated by a particular school. If, however, the procurement resources use seemed important enough we could ask that historical (or even current) events and records be sampled; that is, we would be generating some numbers which might not exist anywhere in the existing university records.

Similarly, at a very detailed level, to which we might very well not proceed except in special cases, we might want to have some data showing, say, the productivity of clerks in filing operations; although we doubt that there will be usable existing university records along these lines. In that case, it may be possible to arrange with university authorities for certain data to be collected on a sampling basis (e.g., for one week). Alternatively, since we know that there have been, in the past, many studies of office procedures and personnel productivity in routine activities--including some extensive ones by the Federal Government itself, going back at least as far as the Hoover Commission--it may be possible to identify sufficiently similar operations outside of the university for which basic data (or even relationships) already exist.

Sources of Cost Data. If we assume, for the moment, that a complete and quantified input-output model has been developed, then--by definition of a complete input-output model--for any specification of inputs (i.e., for any of the decisions for which the model was constructed) it will be possible to say what the output of the social work education process is, in terms such as number of Ph.D's, etc. Under these conditions the "cost" problem is simply that of applying an appropriate set of prices or unit costs to the inputs; or, rather, it is one of specifying a relationship which accompanies this.

Suppose, for example, that we are interested in the costs incurred in providing certain graduate courses in social work. We might use a measure, N, of the number of students who can be accommodated for these courses, and we might develop an input-output relationship between N and, say, the number of faculty members (Y_1), the number of applicants (Y_2), the number of personnel in the admissions office (Y_3), and so on. We could then write an input-output relationship

$$N = f(Y_1, Y_2, Y_3, \ldots)$$

The relevant cost, C(N), could then have the form

$$C(N) = P_1Y_1 + P_2Y_2 + P_3Y_3 + \ldots$$

and the cost data problem becomes that of finding appropriate values for P_1, P_2, P_3, ..., the unit costs or prices of faculty members, applicants and admissions personnel, etc., respectively. Where are these data to come from? If our interest is in reproducing past costs, the data must, of course, come from the university itself. Despite the fact that the variables in question are measured in dollars it may or may not be possible to infer historical values from standard accounting data. Consider, for example, the variable P_1, representing faculty member unit costs. The faculty members in question might, for purposes of the model, be required to be in a school of social work; but the readily available accounting data may or may not permit this particular segregation of the data. Certainly we would look to accounting data here, but we might not find this source useful or sufficient.

We are confident, nevertheless, that university payroll and other records would permit an appropriate unit cost to be derived for faculty members; and the same is probably true for all other, historical, unit prices or costs which may be implied by the input-output relationships, whether or not directly obtainable from accounting data. For example, P_2, the unit cost of applicants--assuming, say, that the university does some promotional advertising to obtain applicants--might be based on anclysis of certain historical expenditures, in relation to the number of applicants obtained.

In any case, however, there is serious question about how much effort should go into the determination of historical unit cost or price data. In the case of the faculty salaries, for example, what matters for decision purposes is what salaries will be in the future--not what they have been in the past--so that the more useful relationship may be one which specifies the input-output relationships, and accompanies them with definitions of what (future) price factors to include (e.g., what fringe benefits) at what points in the models.

So far we have discussed cost data as if the appropriate, complete, input-output model and data were available. We feel confident, however, that there will be some input data which will not have the simple physical interpretation which characterizes the rest of the model, fundamentally because this represents, in some instances, one of the better ways of compromising between level of detail and study costs. To illustrate what is involved, suppose we were to discover that, for certain definitions of "supplies," they constitute 1% of the relevant total (historical) costs. We might then begin to wonder whether it was worthwhile to try to identify, as a separate element, the supplies side of any input-output relationship--e.g., if we were studying the admissions office input-output relations it might not seem worth treating "supplies" as a separate input variable. And if, on top of this, it turned out to be a very large effort to quantify the supplies utilized in the course of administering the admissions function, we might decide to omit it from that relationship as an explicit variable--which does not mean, of course, that the costs of supplies would not be accounted for.

Model Development. In order to sensibly specify data to be collected it is, of course, necessary to have at least some aspects of a model in mind. This general qualitative model may, for example, differentiate the important functions involved in the graduate social work education process and the important inputs required for the performance of each function. This model is, at least initially, assumed to be dependent on the foreseeable decisions, on what the investigators can learn from discussion about the process of graduate social work education, on some knowledge of the nature of available data, and on broad experience in model construction. It is, however, independent of any specific quantitative datum, since it is generated, for the first time, prior to the availability of quantitative data. How are we to quantify the relationships involved in this structure?

Suppose we have identified the teaching of certain types of courses as an important function which must be carried out in connection with graduate social work education. We know that teaching requires (1) teachers and (2) space, and, for simplicity of exposition, we assume there are no other requirements; i.e., the maximum output of personnel trained in the courses in question depends only on these variables. We could try, therefore, to obtain a statistical and simultaneous relationship between these variables by the method of least squares, based on historical data. However, we know that technically this is unlikely to be successful simply because the input variables are highly correlated with each other--and this will be true in many of the real cases. Moreover, if the mix of courses in question is different from that observed historically--as it will be for many decisions of interest--the historical relationship may be suspect anyway. Nevertheless, we could derive an average pupil-teacher ratio, say, from historical data, and separately, an average pupil-space ratio and assume that these will hold in the future.

We would then have

$$N = aT \text{ or } bS \text{ whichever is lower}$$

where

N = number of pupils who can be trained (maximum output)
T = number of teachers (a decision variable)
S = amount of space (a decision variable)
a = student-teacher ratio (historical)
b = student-space ratio (historical)

It should be understood that these relationships are, in themselves, deliberately simplified, and that, in addition, there is no possibility of determining resource requirements via any such relationships alone. For example, the actual number of pupils trained may be limited by the number of admissions, which in turn, is limited by the number of applicants. It is thus evident that many relationships will have to be specified and utilized simultaneously, and that the input-output or cost model will necessarily consist of a number of submodels. Moreover, even the simple illustration just given could be formulated (mathematically) in a number of different ways, so that no significance should be attached to it except as discussed here.

A more satisfactory approach to model quantification may be by synthesis of more fundamental elements. Knowing the school's policies with respect to teaching load, with respect to class size, and with respect to average pupil load, we can determine, for any given number of faculty members, the number of pupils which can be handled:

$$N = rdT/s$$

where

N = the number of pupils who can be trained
T = the number of teachers
r = number of courses per teacher
d = limit on class size
s = courses per pupil

A similar relationship could, of course, be generated for space.

Methods of quantification based on historical relationships and methods based on syntheses of policies or other known constraints are not, of course, mutually exclusive. We can derive relationships, on occasion, in both ways, and compare them. If experience is not consistent with policy statements it may be necessary to determine judgmentally where reliance should be placed. For example, if policy is for faculty members to teach three classes, but in fact they have been teaching four, or classes are bigger than they are "supposed" to be, we may have to decide judgmentally which is more likely to be representative of the future, since it is the future which is pertinent.

There is another aspect of the problem of quantification which deserves illustration. Suppose that the relationship

$$N = a_1 T$$

is generated for school No. 1, and a corresponding relationship

$$N = a_2 T$$

is derived for school No. 2. Now if a_1 and a_2 are different the fact can simply be accepted. For some decision purposes, however, it may be desirable to know why they are different, so that the quantification of *r*, *d*, and *s* may be valuable. Conversely, however, if we should begin by quantifying *r*, *d*, and *s*, and discover that they are not significantly different from school to school, there would appear to be no reason not to use the simpler form, collapsing these factors into a single parameter.

Development of Hypotheses for Testing in the National Study. Study of the relationships developed in the pilot effort may suggest important phenomena--important for the ultimate development of cost relationships--which cannot adequately be studied with a sample of four or five. Suppose, for example, we should find that, for the pilot educational processes, there is a negative relationship between unit costs of admissions and the size of the school (number of admissions). The national effort might have to proceed, initially, as if no such relationship existed. However, once the national data had been obtained it might be possible to verify the presence or absence of the relationship in question, and therefore to develop relationships which characterize each school as it develops. In other words, given such a relationship, without additional study of a particular school we could predict the effect on costs in that school if it were to grow or change in ways which it had not experienced previously.

Development of Design for National Study. The development of the design for the national survey will flow easily, it is anticipated, from the proposed pilot study. We shall know the structure of the relevant educational process. We shall be able to describe it quantitatively for the cases studied. We shall know which elements are homogeneous and which are not; which are simple and which complex; which are uncertain and which known with assurance; what data may be available and what assuredly not available. We will be in a good position, in other words, to anticipate the results of a national survey, if the national survey were to be conducted with the intensity and expertise of the pilot effort.

The most critical problem of national survey design will be that of intensive versus extensive study--the question of relatively superficial study of all (or a large number) of institutions, versus more intensive study of a smaller number, or even of specific subprocesses. We think it fair to say that this issue can be expected to be resolved by the pilot effort. In a quite extreme (and highly unlikely) case the pilot effort might even be sufficient to satisfy national objectives, as discussed in the next activity.

Development of a Report on Pilot Activities. It is planned to produce a report which will describe the proposed design of the national survey. Perhaps just as importantly, however, it is planned to present a complete account of procedures, methodology, difficulties, etc., encountered in the pilot effort. The possible significance of this second output should not be overlooked, inasmuch as we plan to obtain a special kind of product. In effect the report we intend to produce might provide a sufficient basis for any interested school, with a relatively modest amount of effort, to develop cost relationships for its own use in the area of graduate social work education. Under certain conditions we would be forced to conclude that the only way to obtain information on a national basis comparable to that for the pilot effort would be to replicate, essentially, the kind of activity involved in the pilot effort for each school in the nation. In this unlikely circumstance the methodological report we intend to develop could be directly useful to the schools as a do-it-yourself kit. If the methodology can be described well enough, it seems reasonable to assume that it could be applied by the schools themselves, with each school developing its own set of cost models. This could turn out to be the best way to conduct a "national" survey.

It may also be worth mentioning, in conclusion, another sort of extreme possibility, referred to previously: that the cost relationships for all pilot study schools might turn out to be identical--a necessary but not sufficient condition for which is a very deep understanding of the administrative processes relevant to social work education. In that event, we might have enough confidence in our results to say that no national survey was required, since we could anticipate its outcome in concrete and specific terms. It is true that we could not have 100% confidence in such projections, but we do not believe that this can be achieved by any technique whatever.

Chapter III

THE PILOT SCHOOLS: DESCRIPTION

A. SUMMARY

Preliminary work was undertaken to determine what decision questions were facing the Government on which the study might throw light. The principal concerns of those interviewed were not explicitly decision-oriented, and involved, for the most part, the same substantive educational issues which educators suggested later.

Four pilot schools were selected for study, based partly on initial ideas about what might importantly influence costs of social work education, and partly on anticipated problems. Extensive discussions were held with school administrators and faculty, and with university officials of the respective parent institutions. Quantitative and other data were assembled and studied. Personnel of the pilot schools were, in general, extremely cooperative, helpful and frank, although this was not quite so true in some university level administrations.

The schools differed in a number of ways which might be expected to produce significant differences in costs. There were differences in curricula, methods, field work and degrees. There were differences in setting and in salary levels. There were differences in program length and size of student body and use made of faculty. There appeared to be differences in objectives, and in the extent to which objectives had been conceptualized or articulated. There were differences in style between deans, and in the respective roles of administrators and other faculty.

The pilot schools had a number of important similarities. All had approximately the same kind and degree of control over their own affairs, e.g., with respect to which faculty members should be hired, so the concept of decision "at the school level" appears meaningful. All were subject to constraints on budget imposed or approved by the parent university, but the impact of that constraint differed sharply from school to school. It was also noted that there was a general absence of well developed organizational planning systems, and sometimes even a failure to recognize the possible significance of such planning--although this does not imply that deans and other individual faculty members did not plan in a limited way.

Existing fiscal data were, in our opinion, generally adequate for cost analysis purposes. However, such data were not always easily accessible in suitable format--so far as we could discover; some systematic differences were uncovered in budgetary practices; and highly detailed, comprehensive, written descriptions of the elements of each accounting category were sometimes lacking. Other relevant data which could be assembled fairly easily included faculty size, ranks, salaries and course assignments; student enrollment by status (Ph.D candidate, etc.); class sizes; and space utilized.

With the help of schools and voluntary cooperation of faculty members two important kinds of data, not currently available, were assembled on a pilot basis. The first provided a measure of the extent of direct agency participation in instructional processes, where such participation was utilized. The second type of new information yielded crude estimates of the uses made of each participating faculty member's time.

B. PRELIMINARY STEPS

Prior to the selection of the pilot schools, a number of preliminary steps were undertaken. Discussions were held with personnel of the Social Welfare Manpower Research Branch which had technical direction of the project, and with senior staff of the Council on Social Work Education in order to develop an understanding of problems and opportunities. Background reading was undertaken in the fields of social work and social work education, and national data were studied. Meetings were held with individual officials of the Social and Rehabilitation Service, the National Institutes of Health, the Office of the Controller, Department of Health, Education, and Welfare, and others, in order to identify what specific decisions or choices might be affected by the pilot or national study of the costs of graduate social work education.

1. Government Decision Interests

Of these activities the only one on which it may be useful or appropriate to report is the identification of decision problems by Government personnel. What was being sought, among other things, from these personnel was the answer to the question, "What Government decision problems are you aware of for which a study of cost factors in graduate social work education might be helpful?"

Now it is an interesting fact that, although it was clear that everyone was going out of his way to be helpful--with the single exception of the individual who insisted he would monitor the usefulness of our work but would not identify any output he would consider useful--there was no one among our interviewees who actually identified a specific choice or decision. To be sure, many important concerns were expressed, on a wide variety of topics, but none were of a form involving specific alternative actions. Thus, for example, the obvious possibility of using pilot or national study findings to influence grant application decisions was not one which was even hinted at by Government officials--a fact which should be of some comfort to those educators with concerns about the uses which might be made of cost information. By citing this illustration of a specific, conceivable set of Government decisions we do not mean to suggest, of course, that this is a way in which such information ought to be used.

Nothing in the foregoing statement should be interpreted to mean that the study of cost factors was seen as being of little significance for Government decision-making in general, as it relates to graduate social work education. Thus, for example, it was seen by some as potentially influencing general policy, rather than particular, routine, administrative acts, --block versus individual grants, for instance--but these ideas had not, in any instance, reached the point where our Government interviewees would say, "We are concerned about the following specific policy choices." The point is of some significance because we might then have felt compelled to try to define and estimate costs in such a fashion that it would then throw light at least on the specific alternatives being considered. From our point of view the alternatives simply were not specific.

For the most part the substantive concerns of Government interviewees turned out to be of precisely the same kind as the educational concerns voiced by faculty, as we later discovered; that is, there was a large area of overlap. There was concern about alternative modes of field work instruction, the role of undergraduate education in social work, generic social work education versus the various "methods," the significance of school size phenomena (students and faculty), the duration of the master's degree program, the magnitude and quality of the doctoral program, the extent of administrative activities (including especially fund-raising). In saying that these were matters of concern to the Government, we do not imply that they were thought to be policy matters which could appropriately be decided on the basis of cost alone; but only that an evaluation of the cost aspects of these phenomena might be pertinent, in a general way, to policy.

There was, however, one area of interest among Government personnel which was, it seems fair to say, almost exclusively theirs. It can be put in its most general form as follows, even if inelegantly: what are we getting for our money? It was clear to many that there were major differences in immediate disbursements by the Government to individual schools--for example, with respect to tuition payments; but it was not clear whether anything different was being obtained from schools. This was largely, but by no means exclusively, a concern about whether educational quality obtained was related to costs--a point to which we shall have occasion to return. It was also, however, a concern at a more mundane level, which can be illustrated as follows: when grants are made for clerical support, are the services provided actually "required," and are they greater than would have been provided in the absence of the grants? We want to make it completely clear that, to the extent that there was concern about what was being obtained for the money expended, it was not seen as having any particular kind of allocational significance, since it was argued that a school which made relatively good use of funds was also clearly in need of less help. To some degree, in addition, the question "What are we getting for our money?" reflects the concerns of those who are remote from where the action is.

Finally, of course, there is an obvious role within the Government, for information which might be derived from the national study, in terms of national budgetary requirements for the support of social work education.

Government decision-makers, like educators, seem to be principally concerned with educational problems, processes and products, rather than the fiscal aspects of school operations. Costs are not seen as being significant from an allocational standpoint, primarily because there are very broad and complex criteria in allocating funds. Costs are seen as potentially significant, however, in broad policy determination, and in establishing national budgetary requirements.

2. Relation Between Government and University Decisions

Even though the general concerns of those Government officials and educators with social work interests were largely in the same areas, e.g., magnitude and quality of the doctoral program, it by no means follows that the same cost-estimating relationships would be appropriate for both types of decision-makers. Cost-estimating relationships should relate factors "controllable" by the decision-maker to costs, and what is controllable by the Government obviously differs from what is controllable by a university or school. To be sure the Government has the ability to say, "We will, or will not, give you money under these specific conditions," but it does not have the ability to decide that a student will be admitted, a teacher fired, or a course added to the curriculum, at least under current concepts of "no Government control." It may be best, therefore, to think of Government choices or decisions as constraints on actions by schools or universities.

From this point of view it is apparent that, if we are to construct models* which explicitly relate Government decisions (e.g., offering stipends to doctoral candidates) to costs of social work education, we must do so via sub-models which relate school/university decisions to costs. Perhaps more simply, if we had models relating school/university decisions to costs, many types of Government decisions might be treated via constraints on these models, e.g., a budgetary constraint. Models which relate school/university choices to costs are, therefore, central to our effort, whether it is the Government or universities/schools which are conceived of as the decision-makers of interest, and it is these models which will principally concern us throughout this report. This emphasis is appropriate in any event in a situation in which Government problems of choice are not well defined.

---

*The jargon which serves well for communication between people with similar backgrounds may impede communication in other circumstances. Our use of the term "model" should perhaps be explained, therefore. The models referred to at this point are cost-estimating relationships, and all cost-estimating relationships are models. As we use the term in this report, a model is a relationship, between factors or variables, which serves to explain or predict, and is a deliberately simple representation of reality. Some models are quantitative and/or mathematical-statistical; others are not. One difference between good models and poor ones, to which we shall have occasion to refer, is precisely the difference between "simple" and "simplistic."

The construction of cost-estimating relationships which may be useful in school/university decision-making is important even if only Government choices are of concern.

3. Selection of Pilot Schools

The selection of schools for our exploratory study appeared as a matter of the greatest importance, as discussed in Chapter II, primarily because we were trying to guess both what the main sorts of difficulties would be in conducting a national study, and, at the same time, what cost characteristics or factors would turn out to be of the greatest quantitative significance. The latter consideration was aimed at establishing hypotheses for later test (in the national study) while the former was designed to increase the probability of successful data collection in the later effort. Even with perfect knowledge of the entire, existing population of accredited graduate schools in the United States, it seemed that it would not be possible to satisfy all of our objectives with only four schools, so that it is simply inappropriate to view the pilot schools (no matter how selected) as a "representative" sample in the ordinary statistical sense. To see that representativeness is an inappropriate concept it is sufficient to consider what happens as we reduce the number of pilot schools to one!

In any event, discussions were held with representatives of the Council on Social Work Education and the Social and Rehabilitation Service, and a number of criteria were developed. First, it was thought to be important that the pilot schools should range from small to large in terms of enrollment or other indications of size. Second, it seemed desirable that the schools, individually and collectively, exhibit as many as possible of the currently observable kinds of educational offerings, including concentrations, degrees, field work modes used, length of program, etc. Third, it seemed potentially important to have both public and private universities represented, because of possible differences in decision structures and availability of data; and, for the same reasons, it also seemed important to pay some attention to the distinction between religious and secular institutions. Regional differences, differences in urban-rural setting, differences in relationships between school and university, and other factors*, were also considered. As was predictable, no "sample" of four could accommodate all of our preconceptions adequately.

A list of six "candidate" schools was then developed, although the schools selected were not yet aware of their good fortune. No school on the list was viewed as being absolutely essential to the study, but, with a single exception, they were viewed as schools which would be forward-looking and likely to cooperate. In the single exceptional case, the school, when approached, did, effectively (but not actually) refuse its cooperation and was dropped from further consideration. Of the remaining five, four became the pilot schols of this study, and the fifth was not requested to become a pilot school. The pilot schools were, alphabetically:

---

* Including such "mundane" items as travel expense. Cost considerations are an integral, important, but usually undiscussed part of the research problem.

- Catholic University of America, National Catholic School of Social Service
- Tulane University, School of Social Service Administration
- University of Chicago, School of Social Service Administration
- University of West Virginia, College of Human Resources, Division of Social Work.

Each pilot school was given an assurance that data would be held in absolute confidence, and this was a promise which could be given in good conscience, and kept, because of a contractual requirement that data not be revealed by the Contractor in any way which would permit it to be associated with the school from which it came.* Each pilot school cooperated fully and effectively, but in two cases university officials at higher levels than the school behaved in a way which tended to prevent access to requested data; i.e., they stalled--throughout the project, or cited regulations of dubious applicability dealing with the "revelation" of information (which might have been overcome given enough time and stamina and justificative activity).

Even in retrospect it is not clear that any other set of four schools would have been better for our purposes, however, since each school played a role in developing our understanding. Observations of this kind are, of course, pertinent to the design of any national survey.

Table 1 summarizes some gross, publicly available characteristics of the pilot schools, and illustrates some aspects of their diversity. It should be observed that no other material presented in this report can be associated with particular schools, even though some information is presented on a school-by-school basis, by the use of the letter designations A, B, C, and D. These designations were randomly assigned from one location (table) to another, so no inferences can

---

* The confidentiality of data has been protected even from the Social and Rehabilitation Service (the sponsor), and the Council on Social Work Education (a subcontractor)--although neither, it should be said, has made that difficult to accomplish.

TABLE 1 SCHOOL CHARACTERISTICS

Characteristics	Schools			
	Catholic	Chicago	Tulane	West Virginia
Control	Religious	Private	Private	State
Full TimeGrad. Stud.	134	396	248	90
Full Time Faculty	23	57	32	12
Programs:				
Doctoral	Yes	Yes	Yes	
Undergraduate	Yes			Yes
Methods[2]:				
First Year	CW, GW, CO	CW, GW, CO, CC	CC	CC
Second Year	CW, GW, CO	CW, GW, CO, CC P, A, R	CW, GW, CO CC P, A, R	CW and GW, CO
Field Work Block or Concurrent	C	C	C	B
Timing				
Elapsed Time for MSW degree (Months)	21	21, 18	17	20
Academic Calendar	Semester	Quarter	Semester	Semester
Times of Admission	Fall	Fall, Spring	Fall	Fall

[1] Based on data derived from Statistics on Social Work Education, 1968, (New York: Council on Social Work Education, 1969) and individual school catalogs.

[2] CW-Case Work, GW-Group Work, CO-Community Organization. P-Policy, A-Administration, R-Research, CC-Combined Concentrations.

properly be drawn by, say, associating information in various places with "School A."

Four pilot schools were carefully selected on the basis of a priori considerations about cost factors, the nature of the total population, and the likelihood of cooperation. All were extremely cooperative, and, even in retrospect, there is no reason to believe that any other selection would have been better for purposes of designing a national survey.

In the remainder of this chapter we describe, so far as confidentiality permits, the quantitative and qualitative characteristics of the schools, leaving till later the discussion of the use and relevance of our observations for cost-estimating purposes. The fact that some of the data can be described as more or less readily available (with the cooperation of the schools) should not, however, be taken to mean that they are obvious or insignificant.*

C. HOW DECISIONS ABOUT GRADUATE SOCIAL WORK EDUCATION ARE MADE

1. The School Budgets

The University and the School. A major issue, from a model development viewpoint, arises from the question of where, in the educational hierarchy, decisions are made about graduate social work education. How, for example, is authority divided between the school and the parent university? Typically the school operates through a budget of its own, which may be proposed by the dean to higher authority. In some cases, indeed, there are several formal layers of approval which are required, since, for example, a proposed school budget may require university approval, a university budget (including the school budget) may have to be approved by appropriate committees of the State legislature, or by other governing bodies, and ultimately by the legislature and governor. But why "ultimately"? After all, the legislature and governor are elected, so that perhaps we should say that it is the electorate which must really approve the budget of a graduate school of social work education, at least in a State-controlled school. If this is an appealing line of thought we should not stop there, of course, because it is the electorate which determines, through legislatures, what the rules are regarding the governance of corporate bodies, such as private universities--and even whether they will be permitted to exist.

---

*One pilot school dean, upon seeing certain of the pilot school tabulations in a preliminary form, said: "Which one am I?" Another item of information, relative to the same school, caused an immediate change in certain planning estimates.

It should also be noted that we shall use the terminology "school" and "dean" even where these are not official designations, as at West Virginia.

But this way madness lies, for we know intuitively that it is only under the most extreme and improbable circumstances that an electorate could exercise any sort of effective control over the school budget. The circumstances in which a legislative or supra-university body may exercise control over a proposed school budget may be less extreme and more probable--but still quite unlikely. A university administration may quite frequently exercise some sort of control over a proposed budget, while a "school" may, of course, propose anything it pleases--within certain limits. Thus if our concern is, as it must be for model purposes, with what tends to happen in fact most of the time--rather than with what might conceivably occur legally--we have to ask where "real" decision-making with regard to social work education takes place as a practical matter. From this point of view we believe it is sensible to ignore any routinely exercised influences which may arise outside of the university itself.

In this simplified framework we conceive of decision-making with regard to graduate social work education as being divided between "the school" and "the university," where the latter means the university-wide, central administration. In simple terms it seems appropriate to say that the university issues certain general guidance, to which the school must adhere, but it is the school which formulates and proposes the budget. In practice the university may sometimes insist that the budget be altered, but this tends to be in terms of gross budgetary totals, rather than the specific, programmatic aspects of the budget as proposed.

Furthermore, once a school budget is approved, the university tends to be very little concerned with school operating decisions which may cause actual expenditures to be different from proposed ones, unless, of course, the overall budget is materially affected. Thus, for example, a school-level decision to hire a particular faculty member at a salary level higher than budgetted would tend to be rubber-stamped by the university, so long as overall budgetary constraints were being maintained. An unbudgetted, unapproved major shift in program might, of course, be a different matter. However, the ability of schools to "fund themselves" through Government grants may be an important long-run determinant of the real freedom which can be exercised.

In general, then, it appears reasonable to talk about decisions "at the school level" as a meaningful category, in contrast with decisions "at the university level." The former consist of operating decisions made within the framework of an approved budget, as well as decisions which govern the content of proposed budgets. If, then, the content of budgets can be described in a general way it will be a useful indicator of the content of school-level decisions, and, by implication, of university-level decisions. Before describing the elements controlled by schools it must, however, be made clear that the mechanics of proposed and approved budgets leaves open the whole question of the actual degree of correspondence between the two--a subject to which we will return in connection with the role of the dean.

There was a marked similarity between the pilot schools with regard to the items or elements which were viewed as "direct" charges, to be included in their budgets. Of these the principal items were, of course, the salaries of those personnel for whom the dean was administratively responsible, which included the faculty of the school and supporting staff, but not such salaries as those of maintenance personnel. Each school also included in its budget line items for office supplies, office equipment, furniture, publications, and so on, which we will describe by the words "supplies and equipment." In addition, each budget had a large number of line items which we categorize as "miscellaneous," including travel, equipment rental, professional fees, postage, etc. The most important single difference in budgetary coverage referred to the employee contribution to fringe benefits which, in one school, was treated as part of overhead rather than the direct school budget. The relative magnitudes of these categories of school budget expenditures are shown as Table 2, in which some adjustments have been made in the raw data to achieve greater comparability. It is clear that from a budgetary standpoint, school-level decisions relate overwhelmingly to faculty and support staff.

The school budgets thus completely exclude certain categories of items which appear in university budgets, such as those relating to the Offices of the President, the Controller, the Registrar; the Dean of Students; central mail, telephone, accounting, and computer services; libraries; maintenance and operation of buildings and grounds; and many others.* As might be expected, decisions with respect to these matters tend to be "university level." They also have the property, of course, that they tend to deal with functions which may importantly affect all schools and departments of the university rather than graduate social work alone. On a traditional allocation basis these items would add between 23 and 42 per cent to the school budgets, for the pilot schools.

It makes sense to think of decisions affecting social work education as being made at two levels, the first being

---

* University budgets also include items which are viewed by auditors and others as "auxiliary," and which are entirely excluded from consideration in this report. These items include dormitories, cafeterias, university press, university contract research facilities, etc.

TABLE 2 DISTRIBUTION OF DIRECT SCHOOL COSTS[1]

	Cost Category			
	Faculty Salary	Staff Salary	Supplies, Equipment and Misc. Expenses	Salary[2] Fringe Benefits
School	Percentage Distribution			
A	71	13	11	5
B	73	11	6	10[3]
C	74[4]	9	7	10
D	78	6	8	8

[1] Includes all school expenditures, but not university overhead or capital cost of space in building.

[2] At some schools salary fringes (FICA, TIAA, etc.) are included in the university overhead. For this table and in all analyses contained in this report, fringe benefits are treated as a direct expense and university overhead is appropriately adjusted.

[3] Includes certain fringes not included elsewhere in the table, such as health and life insurance, because of data limitations.

[4] Does not include faculty-member's share of TIAA, which was paid entirely by the university.

Note: All data in this report refer to the academic year 1968-69, except where indicated.

the school level and the second being the university level. These decision levels correspond roughly to the way school and university budgets are maintained. The most important decisions at the school level, from a budgetary point of view, are those relating to faculty and support staff.

Relations Between Schools. The meaning and significance of any statements about decisions and costs clearly depend on the relations between the graduate school of social work education and other schools/departments. If, for example, it were possible or were the practice to acquire, say, one-third of one's credits for a master's degree in courses taken outside of the graduate school of social work education, it would be absurd to behave as if the educational decisions which matter occur exclusively at the school and/or university levels. Conversely, if, say, sociology students routinely take a significant amount of work in a school of social work, it is not clear whether this should be regarded as "graduate social work education" within the meaning of the request for proposal.

The magnitude and importance of this phenomenon was studied for the pilot schools by attempting to answer two questions: (1) how much use was made of course offerings outside the graduate school of social work by those working toward a master's or doctoral degree in social work; and (2) how much use was made of course offerings in graduate social work education by students other than those in social work. The results are displayed in Table 3.

If, to fix relative significance, we assume that the cost implications of a student-course are the same in graduate social work education and elsewhere, and consider School B by way of illustration, we might say that, unless some budgetary adjustments are made, there will be a tendency for 2.2 percent (2.5 minus 0.3) of the graduate social work school's "true" budget to be accounted for in the budgets of other schools and departments. On this basis the maximum adjustment which might be made (in the pilot schools) is 3.8 percent (for school A). If, perhaps more realistically, we assume that a student-course in social work is "more costly," the maximum adjustment would be reduced. Clearly the phenomenon of interchange between schools does not have important budgetary implications in the pilot schools.

We thus conclude that, for purposes of dealing with graduate social work education (insofar as costs are incurred by universities) we can treat the university as having four kinds of costs: (1) those direct graduate social work education costs which appear in school budgets; (2) those indirect costs appearing in a university-level budget which represent items (such as electric power) that clearly contribute to graduate social work education, as well as to other departments; (3) those costs which are for items that, it is assumed, neither influence graduate social work nor are influenced by it (such as student dormitories); and (4) those costs which are associated with interchanges between the graduate school of social work and other

TABLE 3 INTERCHANGE BETWEEN SCHOOLS OF SOCIAL WORK AND OTHER SCHOOLS AND DEPARTMENTS

(Percent of Student Courses in Schools of Social Work)

School	Student Courses Taken in School of Social Work by Non-Social Work Students	Student Courses Taken in Other Departments by Social Work Students
A	1.5	5.3
B	0.3	2.5
C	Nil	Nil
D[1]	0.3	4.0

[1] Estimated.

departments/schools, which may, in practice, be small enought to treat via simple adjustments in estimates rather than by explicit analysis.

From a practical point of view the main university-incurred costs of graduate social work are those appearing in the school budget and those associated with university "overhead."

2. School Operating Decisions

So far we have discussed university-incurred expenditures affecting graduate social work as if they were the result of decisions made by entities called "the school" and "the university," respectively. In fact, of course, it is not clear that either of these entities really makes decisions. We are not too concerned about the fact, which we assumed from the beginning, that it may be impossible to say a particular individual made any particular fiscal and/or operating decision "by himself." The implication of this fact is merely that the particular measures of decision consequences (including costs) which should be dealt with are those which can be part of an organizational dialogue.

However, if we are to construct explanatory models in any detailed way we need to know how the various educational and administrative processes of the school are carried out; that is, we need to know what it is that determines what people actually do. Since what people "do" in schools often has the property that it represents a "decision" of sorts without much in the way of overt action, e.g., a student's admission, we sometimes think and speak of this as an interest in how school decisions are made. More fundamentally, however, it is an interest in the functions which are carried out in the schools, so that these functions can be quantified and used as the basis for the construction of cost-estimating relationships.

The Role of Objectives, Planning and Policy. To the extent that there are established or stable school objectives, planning procedures and policies which guide what is done we can use these as a solid basis for model construction: e.g., there could be a rule which says that classes shall be no larger than x and no smaller than y--which would have clear model implications. The question is, however, to what extent these actually exist.

Although a statement of objectives was required for school accreditation, faculty members did not appeal to these as being what "the school" wanted to accomplish; nor did they justify their own activities in these terms. No one, indeed, even referred to these when asked about objectives. To be sure, some individual deans and faculty members could verbalize about objectives, but these appeared to be largely statements of individual preference with respect to what the school objectives should be, rather than authoritative statements of what they were.

At a certain level there was, of course, apparent agreement within, and even between, schools. For example, all agreed that is was an "objective" to turn out MSW's--and all were doing so. Some specifically qualified this objective in terms of a desire for "quality." Even here, however, agreement was limited, because some thought it important to make distinctions between practitioners, researchers, teachers and "leaders." In two schools objectives were expressed relating to the production or development of new knowledge in social work, and one even had a policy designed to encourage such research by limiting outside remunerative activities--a policy perhaps more honored in the breach than in the observance. Some expressed objectives in terms of community service. It was never clear, however, whether community service and research were viewed as independent objectives, or whether they were subsidiary and instrumental to the long run achievement of more narrowly conceived educational goals.

Expressed in these formalistic terms it appears as if "school objectives" were, in fact, a serious concern of many. On the whole, however, we do not believe that this was so. One faculty member described his conception of his school's objectives by saying that it was merely "to have the best school." A dean, upon being asked what objectives might guide a decision to hire an additional faculty member, responded that if the prospective faculty member were of high quality, and was obtainable within the dean's budget, he would hire him because "it would be good for the school." One senior faculty member with administrative responsibility stated that the school was operated not to achieve any commonly accepted "school objective," but "for the benefit of the faculty."

Given the absence of generally accepted school objectives it is not, perhaps, surprising to find a corresponding absence of formal planning activities. This is not to say that planning activities do not go on: in fact, we discuss some of these below, in connection with specific areas, such as faculty workloads. But the kind of broad, long-term planning which might have effectively guided decisions over periods longer than, say, a year, was not observed. In one school a long-term "plan" was observed, but it was stated primarily in terms of "projections" with respect to enrollment and corresponding budget, and did not identify what should be done to make the long-term projection come true. In another the dean had taken the very first steps to implement a planning, programming and budgetting system; and, while it covered only a year ahead and was rather primitive, it represented a substantial advance over any other broad planning activity we observed. It seems fair to say that broad, long-term, formal planning activities for schools as such were simply non-existent.

The role of accepted school objectives and formal long-term planning systems was minimal in the pilot schools.

Turning to the area of policy, every school is, of course, bound by a large number of university regulations. Of these the most important (from a cost standpoint) is, perhaps, the use, in some schools, of a student-faculty ratio. As observed by us, in certain pilot schools, and as, we understand, the student-faculty ratio is used in certain large school systems (e.g., California), it serves as an automatic requirement governing the acceptability of budgetary requests. In other words, in a given university there might be a permitted student-faculty ratio, for planning purposes, of 8:1, and budgetary requests involving 7:1 would not receive approval. It should also be mentioned that there were university-level requirements for admission to the university--which did not, however, guarantee admission to the school.

Within the schools themselves there appears to be little in the way of effective "policy" that guides activities. In every pilot school there is, of course, a concept of a "normal" teaching load; and while, in other schools with which we have some familiarity, the concept goes beyond teaching load, and specifies the teaching equivalent loads for such activities as advising students, certain administrative assignments, and other things, in an attempt to achieve "equity," only one pilot school had begun such a formal assignment system (after the observation period). In the absence of a system accounting for all of the major work load elements, it is hard to see how the schools could possibly achieve full utilization of the faculty resources available to them.

Indeed, data from one non-pilot school, in which there was a work load assignment system (which took account of committee assignments, dissertations, released time and "all assigned or quantifiable activities,") make it clear that, even with such a system, there is no assurance of full faculty utilization. By the standards of this school, most of its non-administrative faculty were underutilized. Although there were no absolute measures of (or standards for) the work week associated with full utilization, or of the hours actually spent, this non-pilot school had itself concluded that a significant increase in the number of classes taught could be achieved by fuller faculty utilization.

There is, however, one area of faculty workload assignment for the pilot schools which can be described rather simply, and relatively concretely; namely, the allocation of students to full-time, faculty field instructors. This is shown as Table 4. It will be observed that, within individual schools, the number of students assigned differed by a factor (multiple) of about 3 from one faculty member to another.

There appear to be no policies or procedures which actually achieve uniformity in faculty work loads, suggesting underutilization of some resources.

There are a number of other areas in which established school policy might perhaps be expected to have an important influence on operations. One of these relates

TABLE 4 DISTRIBUTION OF FULL TIME FACULTY FIELD INSTRUCTORS BY NUMBER OF STUDENTS ASSIGNED[1]

		Number of Students Assigned to an Instructor						
		4 or Less[3]	5	6	7	8	9	10 or More
Schools[2]	Average Number of Students Assigned	Percentage Distribution						
A	6.2	30	--	40	10	10	10	--
B	6.3	19	15	30	15	7	7	7
C	9.6	4	--	13	7	39	9	28
Three Pilot Schools Combined	7.6	15	7	25	10	20	8	15

---

[1] Part time field instructors, those who also have classroom assignments, and field work consultants are not shown in this tabulation.

[2] One school has been omitted because the distribution might have identified the school.

[3] One school had a full time faculty field instructor with less than four students.

TABLE 5 DISTRIBUTION OF MSW CLASS SIZE

School	Average Number of Students in a Class	Class Size Interval: 10 or Less	11 to 20	21 to 30	31 to 40	41 or More
		Percentage Distribution				
A	31.8	23	35	27	8	7
B	16.5	4	74	21	--	--
C	17.6	18	51	18	13	--
D	31.6	5	33	27	10	24
All Pilot Schools Combined	26.5	17	41	25	9	8

TABLE 6 DISTRIBUTION OF DOCTORAL CLASS SIZE

School	Average Number of Students in a Class	Class Size Interval: 5 or Less	Class Size Interval: 6 to 10	Class Size Interval: 11 or More
		Percentage Distribution		
A	8.1	33	45	22
B	7.4	14	50	36
C	6.1	54	31	15
Three Pilot Schools Combined	7.9	33	43	23

to course section enrollment or class size, although no one with whom we spoke claimed either to know what it ought to be or to be governed by a "policy." The practice of the pilot schools can, however, be described rather easily, in terms of Tables 5 and 6, which show, for master's and doctoral courses, respectively, the percentage distribution of class sizes by enrollment. Thus, for example, for all pilot schools combined, 58% of the master's course sections had no more than 20 students. What these tables make clear, for present purposes, is the very high variance in section sizes. It may be argued, of course, that the data reflect systematic differences between courses; that is, the deliberate choice of smaller section enrollments for particular courses. If so, we should expect some stability in these distributions over time. Some clue as to stability is provided by Table 7, which represents a non-pilot school. If we consider, once again, only the single statistic for percentage of classes up to a size of 20, we find that it varied from 37 percent to 55 percent in two consecutive years.

There appear to be no policies or procedures which actually achieve stability in the distribution of class sizes.

There are many other matters which might in principle, be governed by established policy. First, there is the size of the student body. An upper limit on the number of "admissions" appears to be established in each school, prior to actual decisions with respect to individual students. Just how this number is determined is not clear, however. There appears to be a concept, in some schools, of "the number of students who can be handled," which may, in turn, be based on a concept of appropriate class sizes, and the more or less known availability of faculty, but we know of no formal processes incorporating such ideas. In any event the size of faculty can be changed, so even the existence of a formal relationship (determined by policy or judgment) between faculty size and student body would not help much.

Furthermore it is known that, in some schools, the upper limit is not effective, because the number of qualified applicants is simply too low to permit the limit to be reached. Can we at least say, then, for the other schools, that this upper limit established by "the school" is effective in determining the size of the student body? Well, not precisely, because there is a large and well-known gap between the number accepted for admission and actual enrollment, so that, even in those schools which have an adequate supply of qualified applicants it will only be by chance that a predetermined number of enrollments will be achieved.

---

*The numbers of acceptances by the pilot schools were, respectively, 362, 83, 201, and 75; while the corresponding numbers enrolled were 196, 57, 122, and 50. For the nation as a whole the ratio of the latter to the former was 0.60, and if this had been assumed for predictive purposes by each school, the errors

TABLE 7 CLASS SIZE DISTRIBUTIONS
GRADUATE SCHOOL OF SOCIAL WORK X

	Class Size Interval				
	1 - 5*	6 - 10	11 - 20	21 - 35	More Than 35
Fall Term	Percentage Distribution				
1964	6	17	24	30	23
1965	6	9	22	43	20
1966	30	4	21	29	16
1967	32	4	19	35	10
1968	16	8	26	34	16

*Excludes individual instruction.

Turning now to individual admissions decisions, the processes if not the policies, differed from school to school, and can be described, up to a point, in formal terms. Although all utilized admissions committees, they differed with respect to the role of the chairman or director. At one extreme there was the school in which the admissions director made 75% of the admissions decisions with the help of one other reader, without requiring or encouraging interviews. At the other extreme, among our pilot schools, four readers read every application and interviews were conducted with more than half of the applicants. Criteria for acceptance varied from school to school, some placing heavy weight on undergraduate academic achievement, as measured by grade point average, while others placed more weight on such factors as the application, interview, references, etc. Two of the schools had active minority group student recruitment programs, with lower standards of admission to their MSW programs. Interestingly enough, in the light of the alleged emphasis on student quality in some schools, none employed systems for ranking their applications relative to each other; that is, applications were processed and decisions made sequentially until the quota was filled. However, where waiting lists were established, openings might be filled by the best candidates on the list.* It appears likely that, with enough work, the admissions processes of each school could be modelled, so that the characteristics of those admitted could be predicted, given the number to be admitted. Differences in composition of those admitted are not, however, very significant for cost prediction in the current state of knowledge.

Are there established policies governing the size of the faculty? To be sure, there are various kinds of constraints, such as the existence of faculty members with tenure, or the budgetary pressures referred to earlier (including the university-imposed student-faculty ratio in some instances). There is also, particularly in field instruction, a concept of an appropriate student-faculty ratio which may act as a constraint. The student-faculty ratio is frequently discussed, indeed, as if it were an important determinant of the need for faculty. Yet if student-faculty ratios are seriously adhered to we are left with the proposition that it is the existing number of faculty members which governs total number of students, while, at the same time, the permissible number of faculty members depends on the number of students. We are left with the proposition that students and faculty determine each other, and, if growth or decline takes place in absolute numbers it is the result of

---

in predicted enrollment would have been +21, −8, +4, and −5; that is, prediction errors would have ranged from 3 to 14 percent of enrollment, simply because of the gap between enrollments and admissions.

* One of the schools was considering revisions of their sequential system to make it more nearly a system for comparative ranking. Under some conditions the impact of such a change on student quality might be appreciable.

chance fluctuations. No one controls or determines them: they just "are." We do not accept this conclusion; nor do we accept the proposition that the number of faculty determines the number of students, or vice versa, or both. Actual numbers are determined by forces which we have not (yet) identified.

The composition of the faculty could be another matter, of course. If, for example, there is a given curriculum, with established methods, it is apparent that the faculty must have certain characteristics. But how is the curriculum established which putatively determined the skill characteristics of the faculty? Curriculum developments, almost of necessity, follow faculty interests and prejudices. Again there is something lacking in our explanation. As with faculty number, we are in a situation where X and Y strongly influence each other, but we have no mechanism for determining either, except perhaps random variation.* There may be some who will accept the hypothesis that differences in the growth and direction of development of schools can best be described in this way, but such differences are clearly not, in any event, ascribable to specifiable policy differences or characteristic differences in modes of operation of the schools.

There are no policies of the pilot schools which can satisfactorily account for the size of the student body or the size of the faculty or the composition of the faculty or the curriculum. The composition of the student body may be predictable on the basis of policy.

3. How Decisions Are Made in Schools

We have seen that the values of many of the factors which are clearly critical for costs and for the educational processes of the pilot schools--such as number of students, number of faculty, faculty workloads, curriculum--are not determined by appeal to, or in terms of, a formal set of "school objectives," or by use of established, formal planning systems. We have also seen that even the kind of explanation which runs in terms of "that's the way we do things here," and which we have dignified with the term "policy," fails to account for the most basic or elementary factors which must characterize each school. Yet the curriculum is established somehow, and changes from time to time. So, too, do the numbers of faculty members and students. And while, as we must repeatedly point out, these may be influenced by the parent university, the Government, and other forces, they are established in the end by forces within the school.

---

* "Random variation" or "chance fluctuation" is not really an explanation, of course, but for certain practical purposes it may suffice. The use of the concept may be simply a recognition that we never really explain anything completely.

What are these mysterious forces? They are, of course, people--faculty and students. We can describe faculties in a number of ways: who has formal responsibility for what; what the organizational relationships are; what formal uses are made of committees--as we did for admissions, for example. We can also describe the increasingly active role of students. We can* then go on to describe, let us say, how each comittee or other entity actually functions, and how "the committee" makes decisions.

No one with any experience of faculty operations would underestimate the magnitude and complexity and difficulty of this task. One educator has stated:

> "...the styles and frameworks for decision-making which now prevail among deans and faculties...tend to draw primarily upon non-quantitative information..., to engage in rudimentary manipulation of such data as they have, and to rely upon artistic and similar cognitive styles in making choices and plans. Hunches, educated guesses, prescience, political savvy, leaks from friends in high places (not excluding divine revelation), and advice from other deans....all are dominant features of contemporary decisional styles, and few rest upon quantitative data or procedures."**

He goes on to refer to the importance of "the non-rational features of the university and all its workings, and the socio-political dimensions of decision-making (in this or any other kind of organization)." We concur fully in both statements.

The matter does not end there, of course, for if we were to try to establish how the number of faculty members (say) is determined, we would have to describe not merely "decisional styles" of individuals, but how these decisional styles interact, which people are being manipulated and by whom. We would then find that, in the curriculum committee, Professor P voted against Professor Q's proposal to introduce a new concentration, on the nominal grounds that the enrollment would not be large enough (but actually because Professor Q was reported, by Professor R, to have called him an "old fool"), thus thwarting the dean's plan to justify a major expansion in faculty to the university president in terms of the new concentration, which he had persuaded Professor P to introduce to the curriculum committee by flattering him about the quality of Professor P's latest paper (which he had not had time to read). The dean's behavior, in turn, was the result of some remarks by his wife, who had learned from another dean's wife that the latter had a larger (and therefore more successful) school.

---

* In principle.

** Quoted, with permission, from a letter from Professor Robert D. Vinter to Mr. Gershon Cooper, dated 12 March 1970.

We could drop the whole matter here, of course, because it is apparent that, by going down this path, we shall not find either the variables which really matter, or the constancies and regularities which are essential to the construction of quantified relationships. We could say, simply, "there are complex, internal mechanisms which generate 'school decisions,'" because we shall never be able to say, usefully, that "the school makes this class of decisions based on these identifiable factors" --and it is virtually useless for our purposes to say less.

Nonetheless, certain features of the situation do deserve comment, if only because there is an intellectual "puzzle" involved, at least to some. Some schools are large and others small. Some grow, others grow faster. Some are looked to as leaders, while others are tolerated. Given the irrationality of the whole decision process, why does this happen? Is it all "chance"? Our answer is that it is not. In every school decisions *are* made about everything that matters. In every school, by virtue of position, prestige, intellect, political skill or simply because they "give a damn," some will be more influential than others in guiding the decisions made. And it is what these influentials "want" which will determine what happens.

In some schools the center of influence may be a few prestigious teachers who happen to share, more or less, a point of view; e.g., as to the importance of research, or the need for attention to certain areas of teaching. The center of influence may, indeed, be a shifting one, depending on the topic and the concerns of particular individuals. In other schools, and for some purposes, it may be the dean--alone, or through shifting alliances--who is the center of influence, because of his personal characteristics, because of those of his colleagues, and because of the hard factual situation facing the school (easy money, not enough students, or whatever). Hence the school does move and develop because it is given impetus by the "desires" of individuals or groups. We shall have occasion to return to this statement later.

In a progress report prepared in the course of this study we adopted what we called a "useful" and a critic called a "beguiling" simplification that it is "the dean" who *is* "the school," that is, that it is he who is really the prime mover in the complex decision processes of the school, that it is he who is *the* influential in most things most of the time in most pilot schools, even though he may always be sharply aware of the constraints on his action. We think this is a view with which most of the pilot school deans would agree, and we say this partly because the view was developed as a result of what we learned in the pilot schools. The dean is the budget and fiscal officer, and is nominally responsible for the recruitment, selection and administration of faculty, including decisions not to renew contracts. It is the dean who is the negotiator with the university to establish the school budget, on which faculty fortunes in part depend.* It is the dean who, as one dean elegantly phrased it, "stands at the crossroads of fiscal and operational responsibility," and who may therefore find it somewhat less difficult to move the school in a given direction than would anyone else. It is the dean who is most likely to be among the influentials.

For our purposes it matters not at all whether, or to what extent, a dean is, in fact, the moving spirit in his school. At most we are concerned with the facts that (1) the schools do move, and (2) many of the most important internal school processes are, in a sense to be discussed more fully later, unpredictable because they depend on the personal likes and dislikes of individual human beings, and the complex interplay of faculty forces. That influence within the school which causes it to move--to change its size or character or image or effectiveness or cost--which may mean Professor A today, Professor B tomorrow, or their wives the day after, is what we shall mean by "the dean." When we speak of a decision by the dean, we shall mean a "school decision."

The important factors affecting costs and resource use have values which are determined by the extremely complex, highly personal, and irregular interplay of faculty influences, and are, in a quite fundamental sense, unpredictable. In the pilot schools the dean appeared usually to be the most important single influence in shaping the school's future course, but always acting under constraints which made success highly uncertain.

D. CHARACTERISTICS OF THE SCHOOLS

In the previous section is was our aim to establish certain characteristics of the pilot schools, namely, those which might help identify the key objective factors which influenced educational processes and therefore costs. In the course of doing so we had occasion to present a number of items which, from one point of view, simply describe the schools, such as the distribution of school budgetary expenditures, faculty field instruction workloads, class sizes, and so on. In this section it is our intent to provide additonal descriptive materials which may help round out our picture of the schools--so far as permissible--and which clearly reflect, or reflect on, costs.

---

*His success in these negotiations will depend on many things: the outside funds he can raise; the felt needs of the community for social workers; his personal relationship with the university president; and many other things--including, it should be noted, whatever analytical justifications he can make for his budget.

1. Programs, Methods and Curricula

MSW Programs. In each of the schools the MSW programs were clearly dominant from the point of view of resource utilization, that is, a very high proportion of the students were pursuing the MSW degree, much of the curriculum was addressed to their needs, and so on. The schools were dissimilar in mode of operation, however. Two of the schools employed a standardized first year with what might loosely be called "combined concentrations" for all students. The third school offered the "standard" three methods (case work, group work, and community organization) during the first year, while the fourth offered the standard three methods, or, as an option limited to selected students, a generic concentration.

During the second year in three of the schools, at least the three standard concentrations were offered. Two of the schools offered second year concentrations in policy, administration, and research, as well as an option to continue the generic concentrations. The fourth school offered a combined concentration in case work and group work, or a community organization concentration. Despite all of these "offerings" the fact is that case work still dominates in the selection of concentrations by students.

The curricula in all four schools were similar (at least overtly). Following the basic areas then outlined by the Council on Social Work Education (i.e., methods, field work, human behavior, policy, and research), each of the schools offered a limited number of electives and options to the student. One of the schools retained a requirement for a master's thesis. Despite variations in the school calendars, the total classroom and field work time were roughly parallel.

Whether or not the details of curricula taught were really the same was impossible to assess, within the scope of this study. Although all of the schools were, of course, accredited by the Council on Social Work Education, each appeared to have its own style, which made it subtly different from the others. Mark Hale defines three idealized curriculum models.* While no one of the schools fits any of these models precisely, since they are, of course, idealized, it is of interest that three of the schools displayed characteristics which would place them in one of the three individual models. In addition to this kind of characterization, the schools may have images which permit them to be described in terms of "producing social work practitioners," "producing social work educators," and "producing social work researchers."

---

* "Curriculum Models for Social Work Education," in Helen Cassidy, Editor, Modes of Professional Education, Functions fo Field Learning in the Curriculum, (New Orleans: Tulane University, 1969).

In summary, although all schools produce social workers in their MSW programs according to well-defined curriculum standards, and offer fairly well-known program concentrations, it is sometimes alleged that there are differences in the characteristics of the social workers produced. There may therefore be subtle differences in the actual school programs.

Other Programs. Three of the four schools offered doctoral programs, although in all three cases the number of students was small compared to the size of the school. Nevertheless, each school did offer a significant number of distinct doctoral courses. Doctoral programs tended to be tailored on a highly individualized basis, although two of the schools listed a set of basic formalized course requirements.

Three of the four pilot schools carried on some form of continuing education. Two schools carried on extensive summer programs for practitioners. These involved a number of short courses of one and two weeks duration, in basic, advanced and topical social work programs. Courses were aimed both at MSW graduates and those with lower academic qualifications. The courses were taught primarily by outisde faculty (from other schools and from agencies), although there was limited faculty involvement. These programs had separable budgets.

Both of these schools also conducted programs during the year. At one, these consisted of a few short course seminars, of the summer session variety, conducted at convenient intervals (e.g., between regular school sessions). At the other school, three formal, regular session, courses, which were offered in the evening, were open to the community. These were taught by school faculty members, but had an independent budget. In addition, this school from time to time presented special lectures, which were open to the public. These, too, were separable budget items, financed by endowment.

The third school conducted basic evening courses primarily for non-MSW practitioners in Public Assistance programs, during the regular session. These were staffed by both agency and faculty personnel, and were funded under a separate budget. In none of the schools was continuing education a substantial activity, relative to its degree programs.

Undergraduate courses in social work were offered at two of the schools, perhaps stimulated by Government, and in one case, an undergraduate degree was offered. In both cases, the range of social work courses was relatively limited and was expected to be supplemented, of course, by other non-social work undergraduate courses.

2. Field Work

Since field work is a major activity in graduate social work education, consuming a substantial amount of school and agency resources, this portion of the curriculum is worth separate discussion. Among the differences between the schools were concurrent versus block placement, the amount of faculty instruction versus agency instruction, the allocation of students to each faculty member or each agency staff person, and the general emphasis placed on field work by the school.

Three of the schools visited offered concurrent field placement, and one offered block placement. The precise specifications for "concurrent" varied from school to school, sometimes meaning two and one-half days per week in the field in both years, sometimes three days in the first year and two days in the second. In one school a special summer session involving four days in the field was utilized.

The schools varied considerably in the amount of utilization of faculty versus agency for field instruction. One school utilized primarily its own faculty for field instruction, and another utilized primarily agency personnel for field instruction. All the schools, however, used a mixture of the two. The number of students taught by field instructors is also of interest. In general, most agency field instructors handled one or two students, and this did not vary much between the schools, as shown in Table 8. The number of students handled by faculty members varied substantially in schools and significantly between schools as shown in Table 4. The relative significance of the agency and faculty in field instruction is shown in Table 9.

It is of interest to note that distinct differences in the emphasis on the field work curriculum could be detected between the schools. Apparent attitudes ranged from a) the recognition of field work as a part of the curriculum which the student had to be exposed to, but over which the school had little control and on which it was not willing to spend much of its resources, to b) the concept that field work and curriculum content should form a highly integrated educational experience for training a professional social worker as a practitioner (i.e., almost

TABLE 8 DISTRIBUTION OF AGENCY FIELD INSTRUCTORS BY NUMBER OF STUDENTS ASSIGNED[1]

Schools	Average Number of Students	Number of Students Assigned to an Instructor			
		1	2	3	4 or More
		Percentage Distribution			
A	1.6	50	44	6	---
B	2.3	40	33	7	20
C	1.4	67	31	2	---
D	2.0	36	48	5	11
All Pilot Schools Combined	1.8	41	50	3	6

---

[1] The agency instructor frequently has duties other than instruction, so that the data on this table do not, in general, represent full-time loads. This is clearly shown in Table 16, from which it appears that, in a normal work week, an agency instructor can handle 9-10 students.

TABLE 9 PERCENTAGE OF STUDENTS UNDER AGENCY OR FACULTY FIELDWORK INSTRUCTION

School	Agency	Faculty
A	65	35
B	58	42
C	46	54
D	11	89
All Pilot Schools Combined	40	60

the realization of the "practicum" method). Superimposed on all of this was the distinction, with regard to field work, between traditional methods of concentration and generic field work, or, perhaps more properly labeled, field work in which combined methods are utilized. The differences in process between the schools, in the case of field work, could hardly be called subtle.

3. Calendar

No two of the schools had similar calendars in terms of either sequence, duration, or phasing of activities. The school with block placement began with a semester in school, then a semester in field work, a required summer session, another semester of block placement, and a final semester in school. The duration from enrollment to graduation was therefore 21 months. During each semester, however, and during the summer session,only four courses are taken.

Another school had what might be called a standard calendar (if one exists); that is, four semesters in sequence with concurrent field work, no summer sessions, and four to five courses per semester; approximately 21 months duration.

One of the schools had two simultaneous calendars. This school, on a quarter basis, enrolled the majority of its students in the fall. These proceeded to take three quarters the first year, had the summer off, and took three quarters in the second year, with four to five courses per quarter. At the same time the school maintained a special accelerated calendar, admitting students during the spring quarter and graduating them six quarters or 18 months later, but without a summer break. This second program was a "limited admissions" program combined with a special generic curriculum.

Finally, the fourth school recently inaugurated a unique calendar, involving enrollment in September, completion of two semesters for the first year with concurrent field work, a summer session involving field work and one methods course, and a final semester primarily devoted to classroom instruction with a small amount of time devoted to field work. Completion of the program requires only 17 months with graduation in February, a year and a half after enrollment.

Calendar time is a critical issue in graduate social work (perhaps more so than in other fields), since many of the students are sponsored by their employing agencies, and the agencies are being deprived of their services during the period of education. Personal support costs, whatever the source of funds, are also an important consideration. One method for attracting students, therefore, is to shorten the calendar time for the curriculum. It is maintained that there are no differences in curriculum content as a result of calendar changes.

In principle, shortened calendar time may permit a reduction in the utilization of resources. In the case of the two pilot schools with shortened calendar programs, the explicit choice by school administrators was not to burden faculty participating in accelerated programs with an overall increase in teaching load; that is, they felt that non-instructional activity was reduced during the period of accelerated instruction and therefore compensatory time had to be allowed to faculty members during the non-instructional interval. In principle, too, a reduction in calendar time may make possible some economies in the use of space (classrooms), but since space costs do not appear in school or university financial statements, this would not be significant even if the costs were high.

4. Faculty Activities and Work Loads

The faculty activities which are permitted, and the work loads required are often subjects of university policy, although, as we have pointed out earlier, the main impact of such policy appears to be budgetary. The four schools had nominal standards with respect to the number of classroom courses to be taught, but in practice actual teaching loads appeared to depend not only on other work load assignments but on the personal relationships of the faculty member with "the dean." Some called a full teaching work load two courses, others three. Some called six students a full work load in the field, while others insisted on eight or more.

Faculties participate, of course, in activities other than teaching, including research, community service, student advisory activities, a variety of school and university administrative tasks, curriculum development, to say nothing of time spent in maintaining or improving their own knowledge or skills. Administrative activities of faculty are almost always assigned by the dean. While almost all deans "encouraged" individual research, knowledge development and publications, and some emphasized the need for community service (as a means of enhancing contact with, if not encouraging the development of, practical service-delivery systems), no school, at the time of observation had a practical, formal structure along the lines, say, described in Katherine Lower's paper,* which would quantitatively evaluate the total work load of each faculty member. In each school, however, it was asserted that non-instructional activity got into the weighting of assignments somehow.

At every school faculty members who were well outside the range of normalcy with respect to work load were observed, at both ends of the distribution. "Explanations" ran the gamut from, "He likes to work hard and takes on a lot of assignments," to, at the other extreme, "He has a special assignment this year,"

---

* Work Loads in Schools of Social Work, Bryn Mawr, 1964.

--perhaps to avoid impeding the rest of the faculty. In another case a full-time faculty member was assigned only one course, and no other duties, because the dean decided that he should have another year to recuperate from a severe illness. It may be thought that these very frequent "anomalies" are the consequence of informal or non-existent weighting systems for faculty work loads. Actually, however, as was suggested earlier, in at least one non-pilot school where such a system exists, a similar situation appears to prevail.

5. Facilities and Salaries

All of the schools studied were parts of universities and, as such, had access to facilities which were not formally administered by the schools themselves, particularly libraries, and such central facilities as the office of the bursar. In addition, however, each had physical plant which was viewed as being "owned" by the school, with perhaps one exception. Three of the schools occupied their own buildings, two of them being fairly modest, older, university buildings which had been turned over to social work; while the third occupied a modern building designed especially for social work education. The fourth school occupied several floors of a large modern university building, the building being shared with other schools. The range of school space per student, after making various adjustments, was from 43 square feet to 102 square feet in the "most spacious" school.* Three of the schools were in urban settings, while one was more nearly rural.

Salary levels varied substantially within and between schools, and appeared not to be closely related to rank. As is shown in Table 10, for all schools combined, the average salary level of those primarily engaged in classroom instruction was about 30 percent higher than for those who were primarily field instructors. Similarly, faculty salaries in the best-paying school were, on the average, about 20 percent higher than those in the lowest-paying school. To some extent such school differences can be "explained" in terms of regional salary differences, but there are many other factors operating, such as differences in university support, differences in the relative importance of class and field faculties, and of tenured and non-tenured faculty.**

---

* One school had office space set aside for doctoral students.

** This may be as good a time as any to caution the reader that the game which we know will be played--"name the school"--is one which he cannot win. To the extent that data conformed to stereotypes of the schools, the authors have exercised their privilege of not presenting the data. Were it not for requirements of confidentiality we could make a great deal of money making another sort of "book."

TABLE 10 DISTRIBUTION OF FULL TIME FACULTY SALARIES

School or Area	Annual Salary (Thousand Dollars)[1]						
	Average Salary	10 to 11.9	12 to 13.9	14 to 15.9	16 to 17.9	18 to 19.9	20 or More
		Percentage Distribution					
A	15.2	19	32	16	5	14	14
B[2]	13.2	40	30	17	10	--	3
C	12.9	59	23	9	5	--	4
D	14.9	--	54	15	23	--	8
Class[3]	15.9	11	23	23	13	13	17
Field[3]	12.2	50	42	5	3	--	--
All Pilot Schools Combined	14.3	29	32	15	8	7	9

---

[1] In the school year 1968-69.

[2] Salaries at this school are, to a degree, incomparable with others, since no deduction is made for TIAA. School C also adopted this system after the study was in progress, but this does not affect the data shown.

[3] When faculty members teach in both class and field, they are classified by primary assignment. Field consultants are classified in field.

6. Accounting Systems and Records

The influence of both the Federal Government and university associations is increasingly evident in the financial data being collected in universities throughout the country. While it is true that universities differ in the details of their accounting systems, the need to support the expenditures of their funds has in general created a need for more detailed accounting systems and university accounting has become a fairly sophisticated process. Every one of the universities visited collects direct expenses for each school in separate accounts. While this may seem to be an obvious way to do things, perhaps ten years ago this would not have been the case; and even at the outset of this study itself, it was not clear that most schools would have direct expense accounts by school. These direct expense accounts for the most part tend to parallel the kind of accounting required by Federal grants; namely, direct labor, broken down into professional and other salaries, and separate accounts for travel, stipends, supplies and equipment, etc. In addition, every one of the schools treats university expenses as an overhead factor for Government grant purposes.

A great deal of accounting variability between schools exists in the detailed university overhead accounts. Many of these accounts are defined differently between universities, so comparability may be lacking. For example, the registrar's activities at one university may include a mailroon, and at another the mailroom may be a separate cost center. Even if the enormous job of identifying every such case could be undertaken at both the school and university, there is no reason to believe that the existing data would permit comparability, since a requirement would be that the cost centers be capable of being broken down below the cost center level. Nevertheless, this complication is not as severe as it might be supposed, even if overhead were to be treated analytically, since the effect on overhead expenses of the decisions made by the school of social work is not large, and the differential effects created by different overhead accounts would be minute.

One of the major differences between university accounting systems relates to the treatment of grants. In some universities Federal grants are treated as if they are just another source of funds like endowments or private grants, and expenditures against these grants are treated like expenditures against any other endowment. In other words, there is a unified and complete accounting system in which resources and expenditures are identified as to individual sources and use, but a single uniform structure for budgeting and accounting exists. At other universities Federal grants are not included in the ordinary university accounting system; that is, a school will, in fact, have two budgets.

In two-budget schools the university monitors one budget very carefully, covering the endowment, tuition and private grant funds which it gives to the schools (usually called the general fund); the other school budget covers expenditures against Federal grants. Where a separation of this kind exists, it appears that the accounting system for the Federal grant money is different from the accounting system for other funds. In fact, the accounting activity for grant funds may be to a large extent carried on by the school of social work itself and by the grant office of the university, as opposed to the standard university accounting office (and accounts). This may imply that the school may be left to spend Federal grants largely at its discretion, while the university may concentrate on controlling university fund expenditures. The significance of this for our study is, in part, that it requires two sets of accounting data in some schools to describe the school's resources and expenditures and to make up a "complete" budget, and the two sets of accounting data may, in fact, not have the same accounts. They may even differ in time schedule and will probably be physically separated as well. In other words, the expenditures and resources need to be pieced together, and comparability needs to be checked.

7. Funds and Applicants

It appears to be possible to classify schools in two major categories (with the usual imperfections of such categorizations), according to the way in which deans tend to think of, and identify, their problems. For lack of better terms we will call these "funds-limited" and "applicant-limited" schools, respectively, although we do not mean to imply that these are "permanent" characterizations. Funds-limited schools are schools which appear to have no problem in attracting high-quality students, and thus tend to appear to have their size limited by the availability of resources for faculty and stipends. The deans' principal concerns in these schools are with the selection of the best faculty, (given the funds), and with techniques for eliciting additional university funds, or funds from other sources. In the applicant-limited schools the deans' concerns seem to be with obtaining a student body of sufficient size and/or quality; and neither faculty size nor budget appears to the deans as a critical problem.* In fact, these deans make conscious efforts to attract more students, either directly through promotional activities, or through the shifting and selection of faculty to increase the attractiveness of the school.

8. Data Available Concerning Schools

Table 11 identifies the principal sources of information currently available from schools, as identified from the pilot schools. This is not to say, of course, that every item is to be had for the asking from every school, or even that we were

---

* But faculty "quality" may be an acknowledged problem.

TABLE 11 DATA ITEMS

Item Name	Description
Catalog	Lists all courses, instructors, programs, concentrations, etc.
Grade Sheets	Show actual instructor and enrollment in each course.
Class Schedules and Room Assignments	Gives instructor, class number, room location, and class time and duration.
School Budget	Lists each planned item of expenditure for school, including faculty and staff salaries and fringe benefits, travel, supplies, and equipment..
University Accounting Records	Shows detailed costs by activity (School, Division, Purchasing, Registrar, etc.).
University Annual Report	Aggregate university expenditures.
School Planning Documents	Special analyses prepared for specific purposes, containing occasional information which may be valuable.
Grant Listing	Provides a list of Federal grants and breakdown by faculty salary, overhead, travel, and stipends.
Field Work Catalog	Lists field work assignments by students, agencies and supervisors.

100% successful in obtaining every item from every school. Almost all of the available data have some relevance, however, for cost estimating purposes. Other data which could be useful may be available from schools with more complete, objective work load assignment systems.

9. New School Data

Without any formal analytic apparatus it is apparent that "people costs" dominate the costs of graduate schools of social work. Indeed, even the impersonal overhead "burden" of the university administration is itself largely a "people cost." It is equally apparent, from even cursory observation of schools or inspection of gross work load data that we simply do not know how faculty members spend their time, outside the classroom.* It is clearly important that we have this information, however, not only for those with a conventional cost-accounting interest, but, more importantly, for those who aim to quantify and "cost" the educational processes of the schools. Without here facing the issue of just how such data can or should be used, it seems obvious that it would add importantly to our understanding of what goes on in schools if, say, we were aware of how much time faculty members must spend in preparing for class.

We are not really quite so ambitious, however, at this stage of history, for there are simpler and perhaps more fundamental questions which need to be answered. When a faculty member "spends time"--on anything outside of the classroom--whose time is he spending? In other words, just what does he owe the school or university in return for his salary?**

Further we have no way of defining objectively the time "required" to prepare for class. Instead we ask, more modestly, "what time is spent preparing for class?"

In an effort to see whether some light might be thrown on this in the pilot schools it was decided to undertake some faculty activity sampling. This is, of course, only one way to develop such information. It might be instructive, for example, to ask students how faculty members spend their time, or to ask the dean (using a work load system of the Lower type*), or to ask the faculty member to make estimates for everyone but himself. Observers might be hired to report in detail on the activities of faculty, e.g., time-study people. A sampling approach was considered in which activities would be sampled on a random time basis by a selected staff member within the school, but this was rejected for the pilot effort because of the length of time which would have been required, and the complexity of administrative and supervisory arrangements. A journal entry estimating technique was finally selected for the pilot effort (knowing full well the inherent biases of this technique). We feel that, on balance, it provided the best data that could be achieved with a feasible effort.

---

* We do not know how they spend it inside the classroom either, but that is another level of ignorance.

** A special aspect of the problem is well illustrated by what happended at a pilot school when we asked about the availability of faculty during such periods as the break between semesters. We were informed that, contractually, a "full-time" appointee was required to make this time available to the university, but a long-time faculty member expressed utter amazement when he heard this (authoritative) reply. It is not clear, however, whether his reaction was the result of the fact that he had never heard of it, or whether it was due to the realization that it was quite generally ignored.

Using an instrument developed for recording faculty activities, work sampling activity was conducted at all four schools. The instrument as developed was designed to collect data in 32 separate categories--extremely detailed, but felt to be necessary for the pilot phase. In fact, it was hoped that the results of the pilot study would enable us to reject some of the categories as insignificant. Faculty members were asked to record actual data for a week and then to make estimates for a year. The instrument used, and corresponding instructions, are shown as Tables 12 and 13, respectively. Needless to say, participation was voluntary.

The value of the data sampled in a single week when faculty activities are heavily time dependent is certainly questionable. This technique could perhaps be useful if the whole year were covered, the sample size large, and one relied on the random selection process to provide a cross-section of the kinds of activities that might be expected. But in this study it served part of another purpose: that of familiarizing the respondents with the cost categories as they were to be used, so that at the end of the week when they were called on to make annual estimates, they would have a better feel for the required categorization of their own activities.

The results of our limited faculty activity sampling were very helpful from a number of points of view. First they pointed out to us what, in part,we knew: that the form format and instructions were very difficult, partly because of the amount of detail requested. Secondly, they pointed out to us a number of problems with respect to definiton of functions and categories. We think these are readily improved upon.

Response to the faculty activity sample was, in general, quite good--better, in fact, than we would have expected. Response was clearly correlated with the

---

* Op. cit.

TABLE 12 FACULTY ACTIVITY SURVEY FORM

	SUN	MON	TUES	WED	THUR	FRI	SAT
6:00 AM							
6:30							
7:00							
7:30							
8:00							
8:30							
9:00							
9:30							
10:00							
10:30							
11:00							
11:30							
12:00 PM							
12:30							
1:00							
1:30							
2:00							
2:30							
3:00							
3:30							
4:00							
4:30							
5:00							
5:30							
6:00							
6:30							
7:00							
7:30							
8:00							
8:30							
9:00							
9:30							
10:00							
10:30							
11:00							
11:30							
12:00 AM							
NAME							

ANNUAL ESTIMATES: Please complete the table below, providing for each code your best estimate of your average weekly activity (in hours) over the past 52 weeks for each code number.

			(Hours/Week)																					
		No. of Weeks	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.0	4.1	4.2	5.1	5.2	5.3	6.1	6.2	7.0	8.1	8.2	8.3	9.0	10.0	11.0
ON CAMPUS	Regular Session																							
	Other																							
OFF CAMPUS	Vacation																							
	Other																							

TABLE 13 REVERSE OF FACULTY ACTIVITY SURVEY FORM, SHOWING INSTRUCTIONS

Please first maintain the time sheet on the reverse side of this form for one week, using the codes indicated below; then complete the annual estimates requested. Also, please be sure to indicate the course numbers when appropriate.

CODES

INSTRUCTION, SUPERVISION, AND PREPARATION OF COURSES

1.1 Classroom Instruction--Including methods courses taught in field.
1.2 Field Instruction--Individual and group instruction and supervision in support of field training.
1.3 Preparation for Classroom Instruction--Direct preparation for particular classroom instruction, including exam preparation, grading, detailed lecture notes, etc., but not new curriculum development.
1.4 Preparation for Field Instruction--Same as for classroom including making agency arrangements and other administrative tasks directly concerned with field instruction. Also include travel when it involves going to more than a single place of work; include only excess.

SPECIAL NOTE: FOR ITEMS 1.1 to 1.4 ALSO USE ONE OF THE METHOD CLASSIFICATIONS BELOW AND THE COURSE NUMBER.

1. Required of all MSW's.
2. Required for concentration in casework.
3. Required for concentration in groupwork.
4. Required for concentration in community organization.
5. Required for concentration in research.
6. Required for concentration in administration.
7. Required for concentration in policy.
8. Required for concentration in generic social work.
9. Not required in any concentration.

E.G., Correcting an exam for an advanced casework course would be coded 1.3.2 (then the course number).

ADVISING AND COUNSELING--Do not include activities which are primarily field work, or "reading course" instruction.

2.1 Advising and Counseling--MSW's/First Year.
2.2 Advising and Counseling--MSW's/Second Year.
2.3 Advising and Counseling--Doctoral Students.

CURRICULUM DEVELOPMENT

3.0 Conferences and individual work directed toward the development of curriculum ideas and materials for NEW courses.

FACULTY DEVELOPMENT

4.1 Required or authorized school or association-sponsored activities for improvement of faculty skills, including courses, meetings, seminars, and specific readings.
4.2 Independent activities designed to enhance the development of the faculty member, such as writing text books and papers or reading technical documents.

RESEARCH--Faculty research projects NOT conducted primarily for instructional purposes, curriculum development or community service.

5.1 Sponsored by Federal or State Government.
5.2 Sponsored by foundation or other non-government activity.
5.3 Non-sponsored.

ADMISSIONS--All activities related to encouraging, reviewing, and deciding on applicants.

6.1 Getting Applicants--Promotion.
6.2 Processing applications and interviewing.

STUDENT FINANCIAL AID

7.0 All activities related to disbursing funds to needy students, including discussions with students, review of applications, and other related administrative actions.

OBTAINING FUNDS--Individual writing, visits, and group planning activities primarily directed to obtaining Federal, state, local, or private funds.

8.1 Obtaining government funds for training--including stipends.
8.2 Obtaining government funds for research.
8.3 Obtaining other funds.

COMMUNITY SERVICE

9.0 Consulting or voluntary activities where social work practice is an essential ingredient in the service being provided.

GENERAL ADMINISTRATION

10.0 All school-related administrative tasks not elsewhere classified.

OTHER

11.0 Please specify.

school, and we believe this is a function of the amount of promotional effort and care with which the faculty are prepared. Some of the results of the survey, based on 73 responses, have been tabulated as Table 14, and are, we think, of intrinsic interest. Note, for example, the difference between schools A and C, in terms of the shift from instructional to administrative activity. Note, too, the very small amount of time devoted to research, and the small differences between schools in that category. However, samples are in some cases (schools) extremely small, and differences between schools should be treated with caution.

E. CHARACTERISTICS OF AGENCIES

As is well known, not all of the costs of graduate social work education are reflected in the budgets of universities or schools. All the pilot schools utilize agencies in the educational process but, as we have seen, to quite different degrees. Aside from differences of this kind, however, there are concerns about different field work models and their "costs." There are also concerns about who should have responsibility for such costs.

Even before the initiation of the project it was recognized, both by us and by the Social and Rehabilitation Service, that the "agency problem" might well have to be deferred entirely to a later study effort. The sheer magnitude of the agency problem, as implied by their number, and by diversity of structure, function and operation, made a meaningful sampling of agencies, per se, a very dubious proposition.

Nevertheless, it was thought to be important to make a beginning, because of the possible quantitative importance of agency costs, and this we have done. A number of avenues for data collection were considered. One was to go to national agencies and try to collect data, despite deficiencies of coverage. In a limited way, this was done. A second was to try to collect data directly from local agencies, with all of the attendant difficulties. The third method considered, and adopted, was to approach local agencies through the pilot schools.

This method appeared to have several advantages. It would ease problems of obtaining cooperation; it would confine attention to an appropriate body of agencies; and it would make it possible to tie together the information for schools and the information for agencies. But what data to collect, and how?

It seemed desirable to make some simplifying assumptions, analogous to those involved in the distinction between "school" and "university" decisions; that is, to assume that there were certain agency resources more or less closely and directly involved in the graduate social work process, while others were indirectly related. The distinction may, indeed, be an even more meaningful one

TABLE 14 DISTRIBUTION OF FACULTY TIME BY ACTIVITY[1]

		Activity					
		(Numbers refer to categories defined in Table 13)					
		1, 2	3	6, 7, 8, 10	5	9	4, 11
School or Area	Average Hours Per Week	Instruction Preparation and Advising Students	Curriculum Development	Administration	Research	Community Service	Other
		Percentage Distribution					
A	48.9	59	6	12	4	5	14
B	47.2	49	3	23	4	2	19
C	45.6	40	--[2]	33	3	7	17
D	45.0	55	7	14	5	4	15
Class	45.0	38	7	22	7	5	21
Field	44.0	66	1	20	1	3	9
Class and Field[3]	50.5	62	3	13	4	5	13
All Schools Combined	45.1	52	4	19	4	5	16

---

[1] This breakdown is for activities during school sessions only.

[2] A slightly modified faculty survey questionnaire used at one school did not permit separation of this item from "Administration."

[3] Instructors who teach in both classroom and field.

for the agency than the educational institution, for it may be quite reasonable to view instructional activities as entirely peripheral to agency operations.

Moreover, it seemed likely, after visiting a number of agencies which served several of the pilot schools, that we could identify a priori the important items which might vary directly with the use made of the agency for instructional purposes. These were identified as being the agency instructor himself, secretarial support for the student, and the space assigned. It was reasoned that, if these could be evaluated, it would provide a reasonable lower limit to agency expenditures for instruction, since some items were clearly not included in this (e.g., supervision), while if some feeling could be obtained for the magnitude of excluded items (through the use of an overhead rate, say,) it might at least indicate the approximate magnitude of the agency cost problem.

This approach appeared to have one outstanding virtue: all of the data, with the exception of an overhead rate, appeared to be obtainable from the agency instructor himself, if he could be induced to cooperate. Accordingly, a simple form was developed, and distributed to their respective agencies via the pilot schools. This is identified as Table 15.

Some of the results of this effort are shown as Table 16, based on 101 voluntary responses. Considering some of the sample sizes, the methods of estimation, and the extreme variability in the characteristics of the agencies, methods, and so on, there is a remarkable sort of consistency in the results from school to school. On the average, agency instructors spend about one-half day per week, per student assigned, regardless of school. On the average a secretary can handle about eight students. On the average, a student is assigned about 87 square feet of space. Hence if we know salary levels and rental costs, we are in a position to put an important bound on "direct" agency use of resources for instruction.

Table 17 shows salary distributions for the agency instructors, as obtained from our survey. Perhaps the most interesting aspect of these data is that the average salary level for agency instructors is about 4 percent higher than for faculty field instructors. However, in interpreting these data it must be borne in mind that the faculty data represent salaries for an academic year, while agency data are on a 12-month basis--which may mean about 11 months of work.

What happens, then, if we prorate the salary of agency instructors, and determine the cost per student for such instruction? The answers are shown in Table 18, which fails to display one startling number (for school D)--startling because with agency instructional salary levels being of the same order from school to school, and with about the same amount of time per week being devoted to each student, it appears intuitively that the numbers should all be "about the same." And they would be, if all represented concurrent field placements. It appears,

TABLE 15 FORM FOR ESTIMATION OF AGENCY EFFORT IN FIELD SUPERVISION, AND INSTRUCTIONS FOR USE

INSTRUCTIONS FOR COMPLETION OF FORM ON AGENCY EFFORT IN FIELD WORK SUPERVISION

The form is essentially self-explanatory, but the following notes may be helpful:

Item 3 refers to the average number of students assigned, ignoring periods when no students are assigned, so that if, in the fall semester, there are six students assigned and in the spring eight, the answer to item 3 would be seven. On the other hand, if the instructor has students during the spring semester only, he should enter that number of students in item 3. (The answer to item 6 will imply one semester of instructional activity.)

Item 4 can be completed by use of words like casework, generic, research, or combinations of these.

Item 5 refers to actual total weeks worked for the agency, i.e., exclusive of leave, vacation, etc.

Item 6 refers to weeks in which students are under instruction. On a typical concurrent two-semester basis, this might be 28.

Item 7 refers to the total hours the agency instructor works, including overtime, whether or not compensated.

Item 8 asks how much of this time is devoted to students during the weeks in which there is instructional activity.

Item 9 refers to actual salary exclusive of fringe benefits.

Item 10 should be answered to the nearest 100 sq. ft., and refers to space paid for by the agency.

Item 11 should be answered on the basis of estimated usage of secretarial resources, not on the basis of availability.

Completed forms should be mailed to COOPER AND COMPANY
19 Third Street
Stamford, Connecticut 06905

Attention: Mr. Bernard N. Somers

ESTIMATE OF AGENCY EFFORT IN FIELD WORK SUPERVISION

1. Name of agency ____________________
2. Name of field instructor ____________________
3. Number of students assigned ____________________
4. Method(s) supervised ____________________
5. Number of weeks worked during year __________ Weeks
6. Number of weeks of instructional activity during year __________ Weeks
7. Average hours per week worked __________ Hrs/Wk
8. Hours per week devoted to instruction or student supervision __________ Hrs/Wk
9. Annual salary $__________
10. Office and interview space allocated for student use __________ Sq.Ft.
11. Agency secretaries allocated to these students __________
    (Use fractional equivalents, if necessary)

TABLE 16 USE OF AGENCY RESOURCES FOR INSTRUCTION

School or	Hours of Instruction Hours/Student/Week	Secretarial Help Sects./Students	Space Sq.Ft./Stdt.
A	4.0	.16	79
B	4.3	.14	98
C	3.9	.11	84
D	5.0	.08	90
Casework	4.1	.13	85
Other	4.0	.12	87
All Schools And Methods Combined	4.1	.12	87

TABLE 17 DISTRIBUTION OF AGENCY FIELD WORK INSTRUCTOR SALARIES

School or Method	Average Salary	Less than 8	8 to 9.9	10 to 11.9	12 to 13.9	14 to 15.9	16 to 17.9	18 or More
	Annual Salary (Thousand Dollars)							
		Percentage Distribution						
A	12.1	--	23	30	24	17	--	6
B	14.0	--	---	12	51	12	25	--
C	12.9	4	7	31	23	13	9	11
D	12.0	4	8	44	28	8	8	--
Casework	12.3	2	2	48	32	9	5	2
Other[1]	12.7	4	16	23	24	14	14	5
All Pilot Schools Combined	12.6	3	10	34	27	12	10	4

---

[1] Although the data permitted breakdowns by specific methods, the samples were quite small and would have revealed specific school attributes. In fact, the bulk of the "other" category represents "combined or generic" methods.

TABLE 18 AGENCY INSTRUCTOR SALARY EXPENSE PER STUDENT-YEAR[1]

School	Average Annual Cost Per Student-Year (dollars)
A	727
B	890
C	813
D	See Text

---

[1] Includes only prorated cost of agency field instructor. Other costs not shown in this table include agency administrative costs, supervision of instructors, rental of space, typing and secretarial support for students and instructors, psychological counseling for students, fringe benefits and other office expenses.

however, that the concurrent field placement system--together with operating practices of the agency instructors--means that about twice as much instructor time is spent per student, over the life of the placement, than would be the case for block placement. In other words, our data suggest that we can expect block placement to be half as expensive, per student, in terms of agency resources. No data are given for school D in Table 18, because only one block placement school was contained in our sample. However, if a number had been presented it would not have characterized the school per se, but the block placement system. Another way to say this is that if school D were to adopt a concurrent placement system, it would presumably cause the agencies serving it to double their use of resources for instruction, and the salary expenditure per student for school D would then be in the same range as schools A, B and C.

Turning, now, to the subject of agency overhead, we have obtained some feeling for the possible magnitude of this factor through limited information from a few agencies. Using the direct (allocated) agency instructional salary as base, the applicable overhead rates ranged from a low of about 35 percent to a high of 65 percent not including any allowance for secretarial support or rent. The excluded items may add from 50 percent to 85 percent to these estimates, yielding a "total" overhead rate ranging from 85 to 150 percent of allocated instructional salary. There is, however, no guarantee that the range would not increase with additional agency information. It may be noted that the principal factors accounting for the observed range appear to be (1) the cost of direct (specialized) supervision of instructors within the agency; (2) differences in the cost of space with location and other factors; and (3) the general overhead structure of the agency.

One other aspect of agency resource use must be taken up here. Generally speaking students do render services which are, to greater or smaller degree, of the same kind as those rendered by the instructional agency. Such services can be viewed as an offset to the cost incurred by the agency. However, we do not feel that it is appropriate in this project to attempt to place a value on the kinds of services rendered by students as compared to those rendered by more experienced practitioners. It is true that some agency personnel have not hesitated to do so, however, and that these judgments have varied from (1) the claim that the value of student services to the agency exceeds the value of services to the student from the agency; to (2) the claim that student services may be worth about 65 percent of what is used by the agency in instructing them. We have no reason to believe that these judgments about differences in the value of services rendered do not reflect real differences in the situations of various agencies.

Chapter IV

THE PILOT SCHOOLS:
COST MODELS AND ESTIMATES

A. SUMMARY

Relationships for estimating total costs of graduate social work education, in the pilot schools, are developed, as functions of such variables as the number of students, and faculty and agency salary levels, and on the basis of parameters such as the faculty-student ratio, the ratio of faculty to support staff, and so on. Numerical estimates correspond to only a single year's data for each pilot school, but there are substantial cost similarities--and differences--between the schools, which are believed to illustrate important characteristics of their respective modes of operation.

To develop the estimating relationships, a number of distinct concepts of total cost are presented. These correspond roughly to (1) school budget; (2) school budget plus university overhead; (3) school budget plus university overhead plus agency expense; and (4) school budget, plus university overhead, plus agency expense, plus university plant cost. For each total cost concept, there are several output concepts which can be distinguished: (1) student-years; (2) MSW student-years and Ph.D student-years; (3) classroom instruction and field instruction; (4) methods; and (5) instruction, research and community service.

Very substantial differences in cost per unit of output, as between the pilot schools, are shown. These can be attributed to a variety of factors: faculty-student ratios; salary levels for faculty and support staff; university overhead rates; relative use of agency and faculty instructors; concurrent versus block; and other things. Very often these factors tend to offset one another; that is, a school which is high in one respect will be low in another. Nevertheless, important differences did emerge, with one school being rather consistently most economical.

Other features of note include the apparent differences between schools in terms of the allocation of their resources between MSW and Ph.D programs, and the allocation of their resources between class and field work.

B. INTRODUCTION

Earlier in this report we discussed the concept of cost, and we pointed out that it was essentially arbitrary, depending, in an organizational context, upon whatever the organization chose to view as relevant to organizational choice. Arbitrarily, since we are fundamentally concerned with resource use in graduate social work education, we choose to define costs in this study as actual or potential expenditures by a university, which flow from decisions made by or in its graduate school of social work, and which represent a payment for goods or services.

Further, we saw that cost-estimating relationships were relationships or models for predicting costs. These are usually attempts to relate costs to output quantitatively, so that the user can determine what his costs will be corresponding to any output he opts for. If, therefore, there is doubt about what costs should mean (e.g., whether to include item X or not) then we might, in principle, develop cost estimating relationships for each cost concept (e.g., defining total costs to include or exclude item X). Similarly, of course--again, in principle--if there is doubt about what output should mean (e.g., MSW's, versus case workers and others), we can again construct separate cost-estimating relationships, leaving it to the user to select the one most appropriate to his purposes.

It may be recalled, too, that we set out to develop cost-estimating relationships for each school so that the number of cost-estimating relationships which might be generated is given, approximately, by four times the number of total cost concepts times the number of output concepts. This ignores the possibility of displaying alternative models or hypotheses for any one situation. The problem is, in part, therefore, to determine which ones to develop and present.

Arbitrarily we have chosen to proceed in the following way. To begin with we adopt the simplest possible concept of output, and a simple concept of total cost. We then present a predictive model for relating the two, and discuss its rationale and possible application. Model parameters (constants) are developed for each school, and applied to display costs per unit of output. When this has been accomplished we discuss a different total cost concept, keeping the measure of output the same as before. The rationale for the change in concept is considered; a new model presented corresponding to that concept; parameters of the cost-estimating relationship are estimated for each school; and costs presented. In all, four total cost concepts are presented for the simplest output measure.

Thereafter we assume, for presentation, that total cost means the most inclusive measure presented, and go on to consider the model implications of changing our concept of output. In all, five sets of models are developed for each stipulated total cost concept, each corresponding to a different output concept. Many, many models are discussed in total, therefore, for each school.

Cost-estimating relationships are commonly thought of as models for relating total cost to output. Each time we alter what we mean by "total cost" or "output," we generate a new relationship. Many combinations are considered, for each school.

C. VARIATIONS IN THE TOTAL COST CONCEPT

Throughout this section we shall adopt a simple concept of output, namely, that the school produces social work students, who, each year, have been trained for one year, and that the total output per year is therefore given by N, the number of students, times one (unity), that is, by N student-years. There is, of course, a familiar problem of counting students, related to part-time students, continuing education, and so on. Continuing education and undergraduate education are not included in our output or cost concept, however. To have a simple concept of output, however, we adopt the expedient that N really represents "full-time equivalent" student-years for social workers in training. Conceptually it is obtained by summing the number of social work students in each course, over all courses which the school offers, adding the social work student-courses taken outside of the school, and dividing by the number of courses which the school considers to be a full-time student load. For these purposes, therefore, the sociology student who takes a social work course is not included in output.

We can predict the immediate reaction of some: "But you can't assume an MSW candidate is like a Ph.D candidate or even like a part-time student. You can't assume case work is like community organization!" Well, we do not assume that any two graduates are indistinguishable, but we customarily count graduates nonetheless. In recent weeks the Government undertook to count the number of human beings in the country, but without assuming, we trust, that all were identical. Every "model," including cost-estimating relationship, is a simplification which may be useful for some purposes, but will not handle other situations.

Perhaps the only important point conceptually is that we have defined output as if it is "social workers" we are interested in, rather than the educational activities of social work schools and other schools, respectively, but, as was pointed out in Chapter III, the distinction is quantitatively very small. We note, also, that, in the pilot schools, it is easy to deal separately with measures relating to undergraduate and continuing education, and no particular output or measurement problems are foreseen if these were of interest in a national study.

We turn now to various cost concepts corresponding to the output concept described.

We treat the output of interest as related to the transformation of undergraduate social work students into graduate social work practitioners (with MSW's or Ph.D's). Undergraduates, continuing education, and "other department" students could be treated, but are excluded here.

1. Total Cost Concept #1: Direct School Expenses

For this cost concept we take the position that it is the "direct" expenses incurred by the school to turn out social workers which is of interest, plus the direct expense incurred by other schools or departments in providing courses which help turn out social workers. Later we consider cost concepts which deal with university overhead, agency costs, and capital costs, and the possible rationale for inclusion. Here we exclude them.

Now it must not be thought that the description "direct expenses" really defines unequivocally or operationally what is in, and what is out of, these costs. Roughly it means those expenses which are perceived as varying "directly" with the output, so that it corresponds roughly , in practice, to what tends to appear in school budgets. However, the varying school budgetary treatment of fringe benefits illustrates well that, at least from an accounting and control point of view, there is no agreement on what "direct" means.

We ourselves have tried to rise above these differences, mainly to achieve comparability in "costs" between schools--although this would not be, ordinarily, a significant consideration if cost-estimating relationships were being constructed for school budgetary use. In particular we have tried to judge where control resided, and, if it was exercised primarily at the school level, we called it a direct school expense. Thus fringe benefits were viewed as being precisely as controllable as people; that is, if a school decides to hire a new faculty member, an obligation for both salary and fringes is simultaneously incurred--no matter what budgetary practice may be.

Thus for purposes of cost concept #1, which is "like" what deans must worry about, we view total costs as consisting of:

(1) School faculty salaries. This includes the dean's salary (although not always in his budget), salaries of full-time and part-time faculty (whether administrative or not), and special lecturers. It does not include agency instructors' salaries, or fringe benefits (except for employee's share of F.I.C.A., T.I.A.A., etc). Nor does it include salaries for continuing or undergraduate education.

(2) Staff salaries. This includes salaries of support staff of the school, including temporary, full-time and part-time secretaries, clerks, typists, stenographers, administrative assistants, and graduate assistants. Fringes are treated as in (1).

(3) Other expenses. This includes the employer's portion of fringe benefits dependent on salary (e.g., F.I.C.A., T.I.A.A., and other retirement plans.) It includes the school's use of general office supplies and stationery, expenses related to office equipment and furniture (purchase, rental, and maintenance), and expenses of printing and publications for educational and administrative use of the school. It includes student and faculty travel, telephone, telegraph, postage, professional fees, memberships and subscriptions, entertainment, recruitment, and dean's fund. It excludes major capital improvements to school facilities. It also excludes medical and other insurance.

It should be noted that even our most comprehensive cost concept does not include student stipends. For many purposes of Government, school and university they are highly relevant. If, however, it is actual or potential educational expenditures for goods and services which we are estimating, there is no basis for the inclusion of stipends. Such payments are best viewed as "transfer" payments (like welfare payments). Similarly, there are problems for which it would be appropriate, no doubt, to estimate the income foregone by students while in school. Between tuition payments, stipends, income foregone, grants and educational resources utilized, the total cost could be made to appear staggering, if care is not exercised with the total cost concept itself.*

We now inquire how this cost concept is to be estimated or predicted, given the output concept discussed previously. Our model is as follows:

$$C_1 = Nr\,(P + tS)\,(1 + q)$$

---

* The number of students receiving maintenance stipends ranged from 23% to 66% in the pilot schools, with average stipend ranging from \$1600 to \$2400 per year.

where

C_1 = direct school expense per year, as described above, for social workers in training.

N = number of full-time equivalent social workers in training, as described above.

P = average annual salary per full-time equivalent faculty member (including field and part-time). Part-time faculty members (classroom or field) are included on the basis of the ratio of classes or students assigned, to the full-time faculty norms for classes or students. Faculty members who split their time between graduate and undergraduate programs are treated as part-time instructors in graduate social work.

S = average annual salary per full-time equivalent non-faculty staff member.

r = the ratio of full-time equivalent faculty to full-time equivalent students.

t = the ratio of full-time equivalent staff to full-time equivalent faculty.

q = the ratio of other school non-salary expense to salary expense.

The factors N, P and S are viewed as variables which must be chosen or predicted, while r, t and q are viewed as constants characteristic of the mode of operation of a school over some period. Note that costs as defined would need to be adjusted for continuing education, undergraduate education and inter-school transfers to be equivalent to the school budget, in addition, of course, to an adjustment for variation in budgetary practices.

When the parameters are estimated for each school, and the observed values of the variables P and S are inserted, the results for this model are as shown in Table 19.

Several observations are in order. For one thing, the parameter values for each school were derived from a single year of observation and are, in that sense,

TABLE 19 DIRECT SCHOOL EXPENSES: MODEL #1*

School	Cost Per Student Year **	r	P	t	S	q
			(thousands of dollars)		(thousands of dollars)	
A	$3000	.167	12.9	.440	5.1	.194
B	2500	.143	13.2	.361	4.2	.202
C	3200	.167	14.9	.300	3.9	.184
D	2900	.138	15.2	.436	5.2	.199

* See text for discussion of model

** If average salary values ($14,100 for P and $4,600 for S) are utilized in Model #1, the costs per student year at the four schools are: $3,200, $2,700, $3,100, and $2,700.

unreliable. A more important question with regard to them is whether they should be viewed as "constants" at all. If we consider the matter from the standpoint of the school, for example, it is clear that the ratio r of faculty to students *could* be altered. The prediction question is not, however, what could happen in principle, but what tends to happen in practice.

Similarly, if we consider the fact which we pointed to earlier, namely, that there are some schools which do not currently secure enough qualified applicants, we might, perhaps, expect the ratio r of faculty to students to change if the schools are successful in obtaining more applicants. However, applicants are not a variable in this model. The only question, from a prediction standpoint, is how likely the parameter is to be stable--aside from the method of estimating its value.

We consider this question in detail in Chapter V. For the moment, however, we merely point to the fact that there *are* forces at work which will tend to make these factors relatively stable. For one thing, the budgetary processes of the universities, combined with the tendency of the schools to group decision, and to spend what they can get, will tend to promote stability in r, at least for any school that can place an *effective* upper limit on the number it will admit. Schools which cannot get enough qualified applicants may change over time, but this is likely to be a difficult and slow business, even where the dean is committed to improving things: in such instances changes in r will take place only slowly, in our judgment. We note, in fact, that the differences between the pilot schools are not really major with regard to r, particularly when account is taken of the fact that, in a small school, the addition or subtraction of even one faculty member can change the ratio substantially.

Similarly, each school tends to develop a "style," we believe, in such matters as staff support, and the changes in the style are not likely to occur very quickly. Again, however, the absolute numbers of staff are of the order of one-third of faculty, so if we consider a school with, say, 15 faculty members and 6 support staff, the firing of a single secretary would change the ratio t from .40 to .33. So even *with* differences in style the differences between schools in these parameters seem very small. The same is obviously true of the ratio q. Thus the evidence from four schools, selected partly for *a priori* cost differences, is that these are "constants."*

---

* We note in passing our belief that even if the numerical estimates for each school had been based on many years of observation for each school, we could not have much more confidence in them. See the discussion in Chapter V.

The table has many interesting features, however, not the least of which is that differences in cost per student-year cannot be explained, in general, in terms of salary levels. It is also true that models of this kind are obtainable without "new" data. Finally, we note that models of this kind (and some later ones) might be of some value to a cost-conscious dean who was considering changes, and could translate them into the terms of the model (e.g., the faculty-student ratio).

Across the four schools, the cost per student/year can be represented as lying in the interval \$2850 ±350.

2. Total Cost Concept #2: University Operating Expenses

Using the same concept of output (student-years) we now consider what happens if we take the position that there are university expenses, in addition to those described under total cost concept #4, which are attributable to the education of graduate social workers. In other words, should university overhead be included, in accord with our general definition of the costs of interest, and if so, why or why not?

A great deal of nonsense has been written on this subject, to which it is necessary to address some clarifying comments. It has long been a truism of economics that "everything is connected to everything else," and this alone should warn us to be on guard against the simplistic proposition that university overhead has nothing to do with what goes on in social work education, or vice versa.

For one thing there is the simple fact that the university administration can be viewed as providing essential services to the school: pay checks must be made out, tuition fees collected, grounds maintained, buildings constructed, budgets secured. Hence it is clear that there are services whose cost is not included in cost concept #1, but without which graduate social work education would not long endure. The organizational happenstance that the school is part of a university, and that certain matters are handled centrally rather than by the school itself, should not blind us to the fact that "overhead" provides some essentials of graduate social work education.

Moreover, if individuals join the faculty or student body of the school, at the option of the school, it cannot be supposed that the administration of the university operates in precisely the same way as before. If, for example, there is a school with 100 students, out of a total student body of 10,000, (or 1 percent), and if we consider the operation of, say, a 10-man central university accounting department, what shall we say about "the cost" when the school adds, say, 20 students? In general, one would suppose, the accounting department would stay constant (i.e., zero effect attributable to the change in the school). But what if it is not merely the school of social work, but the whole university, which grows by 20%? Well, we might not be too surprised if the accounting workload also grows to the point at which, say, an additional man is called for. If this increase in workload was the consequence of growth by 100 different schools or departments (each by 20 percent), shall we say that the overhead cost increase had nothing to do with the school's actions?

With enough time and effort one could, in fact, study each element of overhead expense, and predict its response to any specified change in the school, with the responses of course being greatly dependent upon both the expense item and the school change being considered. However, we think it may be instructive of the issues to ponder so simple a question as the following: Does the salary of the president of the university (which is in everyone's definition of overhead) depend in any way upon the enrollment in the school of social work? How would the answer change, if at all, if it were discovered that there is a very high correlation between the salaries of the university presidents and the student enrollments in their respective universities?*

We have not, of course, investigated such phenomena, but if we had, and could provide good predictive models for university overhead expense, it would still be quite unclear whether we "should" include or exclude overhead in general. We ourselves believe, however, that if we want a measure of resource use, in the long run, for graduate social work education, appropriate for national or university planning, we had better include allowance for university overhead. Note that the same may not be true for planning by deans, say.

In any event, we have no reason to believe that, if one wishes to take account of university overhead expenditures attributable to graduate social work education, there is currently any better method of estimation available than the use of a "university overhead rate" of the type generated by the Government itself. We have constructed Model #2 to deal with this total cost concept, which includes direct school expense as previously discussed, plus university overhead. The expression for this total cost concept is

---

* We note that administrative and general expenses of universities, (which include presidents' salaries), over nearly three decades beginning in 1930, spanning depression and enormous university growth, varied only between 6.7 and 9.5 percent of total current expenditures of universities. There appears to be no evidence of a trend. Data in this footnote are computed from Fritz Machlup, The Production And Distribution of Knowledge in the United States, (Princeton: Princeton University Press, 1962, p. 83, Table IV-9). "Fixed" expenses may be illusory.

$$C_2 \quad = \quad Nr\,(P + tS)\,(1 + q + u)$$

where

C_2 = direct school expense and university overhead per year

u = university overhead rate, expressed as a fraction of direct faculty and staff salaries

and all other terms have been previously defined, for Model #1.

Table 20 shows the new parameter values for the four schools, and the corresponding costs per student-year. Note that the source of the overhead rate estimate is the officially established Government overhead rate, adjusted for our concept of direct school expense. It thus includes general administrative expenses, maintenance and operation of plant (including libraries), and university services. Auxiliary enterprises are excluded.

Despite the gross differences between schools, despite the differences between universities--as represented by the factor u--the university operating costs per student-year for the pilot schools can be represented as being in the interval $4,200 ± $400, which interval is only slightly larger than for direct expenses alone.

3. Total Cost Concept #3: University and Agency Operating Expenses

Maintaining our concept of output, we now inquire what difference it makes if we conceive of total costs as including agency costs of field instruction. There are a number of reasons for believing this may be important. For one thing, there is the possibility that, under some conditons, payment may have to be made to agencies to the extent that they perform instructional services. Secondly, schools differ importantly in the extent to which the instructional burden is placed upon agency personnel. Thirdly, for some schools it is possible to choose, to some extent, how much reliance will be placed on the agency, and the comparative cost may, under some conditions, be a pertinent consideration.

As before, we proceed to a more inclusive cost concept by adding terms to represent agency costs. Model #3 is as follows:

TABLE 20 UNIVERSITY OPERATING EXPENSES: MODEL #2*

School	Cost Per Student Year	Parameter
		u
		Parameter Value
A	$4600	.52
B	3800	.51
C	4000	.27
D	4200	.46

*As defined by cost concept #2 (Model #2), in text.

In this and succeeding tables for cost concepts we omit parameters previously presented, and show only those required to complete the model computation under discussion.

$$C_3 = N\left[r\,(P + tS)\,(1 + q + u) + kA\,(1 + v)\right]$$

where

C_3 = total university and agency operating cost including direct school expenses, university overhead, agency direct instructional cost and agency overhead

A = annual salary of agency instructor, multiplied by the ratio of time spent on instruction to total compensated time

k = the ratio of students under agency instruction to total students

v = the agency overhead rate, expressed as a fraction of direct agency instructor salary

and all other terms are as previously defined.

A few comments should be made before presenting the results of this model. First of all, it depends on the agency survey data, discussed in Chapter III. Secondly, the agency overhead question, that is, the question of how much overhead is properly attributable to instruction, has at least as many thorny questions associated with it as university overhead, discussed previously. Thirdly, we have very skimpy information on agency overhead--not derived from the survey--but are confident, on the basis of that information, that agency overhead rates vary tremendously; and we have no information which would permit us to characterize the agency overhead rate on a school-by-school basis, so a standard but realistic rate has been used. (Indeed, for each school it would have to be a composite overhead rate for all the agencies it uses!) Finally the model makes no allowance for the not inconsiderable value of services rendered by students, but a strong case could be made for doing so if we had usable information on this topic. The parameters of Model #3, and the results of applying that model, are presented as Table 21.

Under Model #3, the total cost per student-year can be represented as lying in the interval \$4650 ± \$650. Thus the introduction of agency costs significantly increases the cost difference between the most and least costly schools, and adds about 10% to the total cost shown as Model #2.

TABLE 21 UNIVERSITY AND AGENCY OPERATING EXPENSES: MODEL #3

School	Cost Per Student Year	Parameters and Variables* kA	 v
		Values	
A	$5300	$366	1.00
B	4000	98	1.00
C	4600	255	1.00
D	4900	319	1.00

* kA is presented rather than the individual parameters k and A since, in some cases, either k or A could be used to identify the school.

An agency overhead rate of 100% was assumed for all schools. This rate is not inconsistent with our meager information.

4. Total Cost Concept #4: University and Agency Operating and Plant Expenses

It is customary, in university accounting, to make no formal provision for the costs of plant. In many situations, however, it is expedient to compute annual costs as if some portion of capital equipment were being used up each year, either physically or in terms of value. The foregoing models, in other words, make no allowance for the fact that socially valuable resources--buildings, in particular--are being utilized for social work education.

This should not be taken to mean that there are no items of a capital nature which have not found their way into the expenses already shown. For example, the items included in school direct expenses as equipment would, in most (non-university) situations be treated as capital items. However, under stable conditions--no sharp growth or decline--it is likely that this treatment yields "expenses" approximately the same as would a more conventional depreciation treatment of these items.

Nevertheless, plant depreciation is generally ignored, and Model #4 was developed to give recognition to the fact that, so long as university space is devoted to graduate social work education, there are many purposes for which it is appropriate to include an allowance for that cost. That this is so can easily be seen. If there were a sudden expansion of a school, which necessitated rental of commercial space, we could expect that change to appear in the budget of the school as a direct charge, but not if the space were university-owned. From a resource use standpoint, however, it is absolutely immaterial who owns the resources.

With respect to agency capital, our estimate of agency overhead was so crude that it seems pointless to consider an arbitrary addition.

Model #4, representing the addition to Cost Concept #3 of an allowance for plant costs is given by

$$C_4 = N \left[r (P + tS) (1 + q + u) + kA (1 + v) + bD \right]$$

where

C_4 = direct school expenses plus university overhead, plus agency expenses, plus university plant costs

D = rental value (or annualized capital cost) per square foot

b = amount of school space per student

and all other variables are as previously defined.

Table 22 presents the results for Model #4. Note that the value assigned for rental per square foot is pro forma, and is not based on actual investigation. The latter would have had to take account of the age, condition and location of the school, and, had it been obtained and reported, would undoubtedly have helped identify the school being discussed.

We note that, for this model, costs per student-year for the four schools lie in the range of \$5050 ± \$850, and the highest-cost school is about 40% higher than the lowest-cost school.

D. VARIATIONS IN THE OUTPUT CONCEPT

In this section it is assumed for model presentation that the appropriate total cost concept is the most comprehensive one presented in the previous section, represented by concept #4; that is, including university and agency operating expenses. However, numerical estimates corresponding to other models are also presented. We now inquire about what happens if we recognize that there are, indeed, several different kinds of outputs of graduate social work education which may be distinguished.

1. Output Concept #2: MSW's and Ph.D's

One way to begin to think about what may be involved is to recognize that two different kinds of student-years may be "produced," namely, MSW student-years and Ph.D student-years, and to inquire whether there are not significant differences in cost between them. To deal with this question numerically we must, of course, find out what resources are devoted to each of these, it being assumed that all graduate education expenses (total cost concept #4) are directed to instructional outputs.

A formal model (Model #5) can be presented to show what is involved in the recognition of two different kinds of outputs, namely the two equations

$$C_{41} = N_1 \left[r_1 (P_1 + tS)(1 + q + u) + k_1 A_1 (1 + v) + b_1 D \right]$$

$$C_{42} = N_2 \left[r_2 (P_2 + tS)(1 + q + u) + k_2 A_2 (1 + v) + b_2 D \right]$$

TABLE 22 UNIVERSITY AND AGENCY OPERATING AND CAPITAL EXPENSES: MODEL #4

School	Cost Per Student Year	Parameters and Variables*	
		b	D
		Values	
A	$5900	103	$5
B	4200	42	5
C	5000	81	5
D	5400	101	5

*The value for D is assumed, but may not be an unreasonable value.

where

C_{41} = the total cost per MSW student-year

C_{42} = the total cost per Ph.D student-year

and where all of the other variables are defined as before, except that the subscript "1" refers to MSW students, and the subscript "2" refers to Ph.D. students. Thus the faculty-student ratio r_1 refers to full-time equivalent faculty devoted to MSW's and to full-time equivalent MSW students. Hence a faculty member who splits his time between MSW and Ph.D students must be "split" between the two. This was accomplished by analysis of teaching assignments and use of the faculty survey data. It should be noted that this procedure is, in principle, no different from that involved in the simplest model presented, in which it proved to be necessary to separate out undergraduate assignments of some faculty.*

Similar models could be shown for making the separation between MSW and Ph.D costs, for the less-inclusive cost concepts already discussed in Section C. Their nature is assumed to be sufficiently obvious, however, so that they need not be shown explicitly.

Table 23 summarizes, for all four total cost concepts, the estimated costs for MSW student-years and Ph.D student-years. It should be noted that one school was dropped from this tabulation because it does not have a doctoral program.

Perhaps the most striking feature of this table is what it seems to suggest about the allocation of educational resources between MSW and Ph.D students. If we look at the most-inclusive cost concept we see that one school (B) expended about 80% more per Ph.D student-year than it did per student-year for its own MSW's. This is in striking contrast to school C, where the allocation was apparently the same for MSW and Ph.D student-years.**

---

* This is a subject on which we comment in Chapter V.

** Even in this school, of course, this does not mean that the cost of an MSW is the same as the cost of a Ph.D. The cost of obtaining a degree can be estimated by multiplying the data of the table by the length of program (i.e., two in the case of MSW's).

TABLE 23 COSTS PER STUDENT YEAR: MSW AND PH.D

Cost Concept And Number	School		
	A	B	C
	Cost Per Student Year--MSW		
Direct School (#1)	$2500	$2700	$2900
University (#2)	3800	3900	4300
University and Agency (#3)	4000	4600	5300
University, Agency and Capital (#4)	4200	5100	5800
	Cost Per Student Year--Ph.D		
Direct School (#1)	$3800	$5900	$3500
University (#2)	5800	8600	5300
University and Agency (#3)	5800	8600	5300
University, Agency and Capital (#4)	6000	9100	5900
Parameters	Parameter Values*		
r_1	.142	.133	.170
r_2	.168	.250	.153
P_1 (thousands of dollars)	12.9	14.7	11.9
P_2 (thousands of dollars)	17.3	19.0	17.0

* k_1 is not presented for reasons of confidentiality.

Doctoral field work under agency instruction was assumed non-existant; therefore, $k_2A_2 = 0$.

Space allocated per doctoral student assumed equal to space allocated per master's student in this tabulation, and thus not shown. At one school extra space was provided for doctoral students, but a detailed estimate of the amount was not made.

2. Output Concept #3: Field And Class Instruction

The question which is addressed here is the extent to which the use of resources can be attributed to field and class instruction, respectively. The model for this purpose is as follows, with total cost concept #4.

$$C_{43} = N_3 [r_3 (P_3 + tS)(1 + q + u) + bD]$$

$$C_{44} = N_4 [r_4 (P_4 + tS)(1 + q + u) + k_4 A (1 + v) + bD]$$

where the subscripts 3 and 4, refer, respectively to class and field instruction, and all variables are defined in a fashion analogous to that discussed for MSW and Ph.D student-years.

The results are displayed in Table 24. A striking difference between schools is, once again, in the relationship between class and field costs, even when account is taken of agency contribution.

3. Output Concept #4: Methods

Although a model was developed and complete estimates made of total costs by method for each pilot school, the combinations of methods offered in each school were such that to reveal the data would have been to reveal the school.*

As might be expected, the two schools whose programs were highly generic in content showed little difference in costs by method. Where substantial differences appeared, they seemed to be due partly to differences in salary level and partly to differences in faculty-student ratio. While samples were small, they appeared to show "other methods" running about 40% higher in total cost than case work, on the average.

4. Output Concept #5: Instruction, Research, Community Service

For purposes of these estimates the view was taken that the output of the educational process was of three kinds: instruction, research and community service. As was shown in Table 14, relatively little faculty time is devoted to the latter two outputs, so we should not expect the recognition of these outputs to have too much effect. However, utilizing the data of that table, costs were

---

* Estimates are available, as appropriate, to each pilot school, as are other estimates not shown in this report.

TABLE 24 COSTS PER STUDENT YEAR: FIELD AND CLASSROOM INSTRUCTION

Cost Concept And Number	School A	School B	School C	School D
	Cost Per Student Year of Classroom Instruction			
Direct School (#1)	$2200	$1300	$1900	$2200
University (#2)	2800	1900	2700	3300
University and Agency (#3) *	2800	1900	2700	3300
University, Agency and Capital (#4)	3200	2100	3200	3800
	Cost Per Student Year of Field Instruction			
Direct School (#1)	$1000	$1400	$1100	$1300
University (#2)	1200	2000	1700	1600
University and Agency (#3)	1700	2200	2300	2500
University, Agency and Capital (#4)	2100	2400	2800	3000
Parameters	Parameter Values**			
r_3	.110	.066	.083	.114
r_4	.155	.083	.054	.067
P_3 (thousands of dollars)	15.9	14.3	16.5	13.9
P_4 (thousands of dollars)	13.5	12.2	13.7	10.9

* Note that there are no agency expenditures for classroom work.

** All MSW students are assumed to be in field instruction, and agency costs are attributed solely to field work.

allocated to the three output categories, and new costs per student-year computed. The model is as follows

$$C_5 = N \left[r (P + ts) (1 + q + u) + bD \right] w + NkA (1 + v)$$

where

C_5 = total instructional costs

w = percent of faculty time allocable to instruction

and other variables are as previously defined.

The results of applying this model are shown as Table 25.

E. CONTINUING EDUCATION

Because the Government has expressed an interest in the costs associated with continuing education, we now take up that topic. First of all it should be recognized that neither continuing education students nor the costs associated with them are included in the models or data presented elsewhere in this report, and this treatment was made possible by the fact that, with one exception, the data associated with continuing education were easily separable from other data. In the exceptional case promotion, publicity, rent, and other non-personnel continuing education expenses were treated as part of the university's (not the school's) continuing education activities, although it is not clear whether this was because of university policy or because the social work continuing education program in question was so small.

The first question to be faced is what we should mean by "the cost" of continuing education. It seems pertinent to point out, to begin with, that continuing education seemed to be viewed, in the schools, as a strictly peripheral activity. To be sure some faculty participated in teaching continuing education courses, but in every case this was the subject of a definite ascertainable financial arrangement, so these activities could be viewed as taking place on the faculty member's "own time." It was, as we have pointed out earlier, mainly non-faculty in any event who undertook these assignments. It is probably reasonable to assume, therefore, that direct instructional costs can be easily ascertained in general.

If we consider now the cost of management or supervision of these courses, it seems clear that, when the continuing education program is small, the school

TABLE 25 COSTS PER STUDENT YEAR OF INSTRUCTION, WHEN OTHER SCHOOL OUTPUTS ARE ESTIMATED

Cost Concept And Number	School			
	A	B	C	D
	Cost Per Student Year of Instruction			
Direct School (#1)	$2700	$2500	$2200	$2500
University (#2)	4100	3600	3300	3200
University and Agency (#3)	4800	4300	3500	3700
University, Agency and Capital (#4)	5300	4800	3700	4100
Activity	Percent of Faculty Time Spent on Non-Instructional Activity *			
Research	4	5	4	3
Community Service	2	4	5	7
Parameter	Parameter Values**			
w	.89	.86	.87	.80

* Costs are not presented for these activities because total costs might easily reveal the schools.

** Parameter values differ from percent of time because of the allocation of administrative time to the other three activities.

management or administrative time devoted to it is small also, perhaps small enough to ignore; while with a relatively large program, one faculty member was assigned more than half-time to the supervision (not teaching) of these courses. In the pilot schools, therefore, it seems fair to say that, where the school administrative burden became significant, the cost was identified explicitly as being associated with a particular individual and with continuing education.

The greatest factual difficulty in a national survey is likely to arise with respect to direct expenses other than salary and travel: publicity, materials, rental of lecture halls, and so on. In two of the three schools with continuing education programs, these items were explicitly identified, in accounting records, with social work continuing education; while in the third university they were not charged back to the school. The only correct summary statement about continuing education cost data in the pilot schools is, therefore, that all "direct" costs could be approximated in two of the three schools, while only instructional cost was available in the third.

We note, too, that "total" cost is no less ambiguous a concept for continuing education than for MSW's; so that, at the option of the user, the cost of continuing education may be defined to include university overhead.

Turning now to the problem of defining an appropriate output concept, it must be noted that there is enormous diversity in length, intensity, timing, admissions requirements, subject matter, etc., of continuing education programs. Partly in consequence, it does not seem to be possible to do much better than adopt as a measure of output "student-hours," i.e., the sum of the numbers of classroom hours for each student, respectively.

We have developed a simple model for direct continuing education costs, which we write as follows:

$$C_6 = \sum_i E_i H_i (M_1 + M_2)/a$$

where

C_6 = total direct costs of continuing education

E_i = student enrollment in i-th continuing education class

H_i = hours of instruction in i-th continuing education class

M_1 = instructional cost per hour of continuing education instruction, including honoraria and instructional salaries

M_2 = all other direct costs, including continuing education director's salary (pro-rated), promotion, instructional materials, rental of space, etc.

a = average class enrollment.

Before presenting the results of applying this model in the pilot schools, a few observations are in order. First, the model has only one constant (parameter), namely, the average class enrollment. Each school had an upper limit on continuing education class enrollment (which differed from one place to another), although the nominal upper limit was violated to some degree in each case. Similarly, it seemed to be common practice to cancel scheduled classes when the registration was very low. Thus, there were rough upper and lower limits, in each school, on class size, tending to bring about some constancy in average class size.

The other factors in the equation are variables which are more or less controllable or predictable, although it should be pointed out that some variables (E and M_2 in particular) may not be independent.

Table 26 summarizes our cost information for the pilot schools.

TABLE 26 DIRECT COSTS OF CONTINUING EDUCATION *

School	Cost/Student/Hour		Parameter and Variables		
	Instruction Only	All Direct	a	M_1	M_2
			Values		
	dollars	dollars		dollars	dollars
A	1.78	3.84	21.3	37.90	43.90
B	1.39	2.18	18.3	25.60	14.10
C	1.94	----**	16.7	32.15	-----**

* One pilot school had no continuing education program.

** Data not available.

Chapter V

LIMITATIONS AND IMPLICATIONS OF CURRENT MODELS

A. SUMMARY

The models which have simple outputs (student-years) are viewed as being useful for prediction, under specified conditions, because there are factors operating which tend to make for stability of the parameters. Where the outputs are complex, and "costs" are determined by the use which the school chooses to make of its budget, the same stability cannot be assumed. Thus, for example, a given faculty member might be switched to, say, teaching doctoral students--or the number of Ph.D students might fall--with a consequent unpredictable increase in the "costs" attributable to Ph.D's.

The cost models for a given school are of limited usefulness to that school (even if it is concerned about costs), because they seem to say that some very critical things happen "by themselves," in an uncontrollable way, even if the models are accepted at face value. What, for example, would one of the pilot schools do, if it had a given budget and wished to increase the number of students at the doctoral level? Suppose the school were not satisfied with its curriculum, what should it do to change the curriculum, and what would it cost? How could these models help to determine the cost implications of a change in admissions policy? Isn't there a way to take account of tenure?

The absence of the same kinds of explanatory content from models also makes it unclear how to treat certain joint cost problems. To what extent, for example, would it be possible to add master's level students (and quality faculty to teach them) without adding students at the doctoral level? To what extent can (would) a school increase its research output and instructional output independently? If the outputs are really joint products (as the schools actually operate) costs should not be "allocated" to them to develop separate cost relationships or estimates, to say nothing of prediction.

The concept of cost-estimating relationships for decision purposes virtually implies that there is a concept of efficiency: something to be minimized or maximized subject to constraints. There is no evidence that, in general, schools effectively operate in this way--to achieve specified amounts and kinds of outputs at the lowest cost, or to achieve the maximum of these outputs for a given budget. It may be better, in current circumstances, to think of social work education as being more nearly analogous to the consumption processes of the family unit, than to the production processes of industry.

B. PREDICTIVE CAPABILITIES OF THE MODELS

There are a number of questions pertaining to the models which need to be discussed. A minimum requirement for cost-estimating relationships to be useful is that they have predictive capability. Obviously, however, there is no relationship for predicting anything which will be satisfactory under all conditions. Therefore, to discuss virtues and limitations, we are forced to consider, under various conditions, the degree to which the relationships will, or will not, have predictive capability.

To discuss the models intelligently, furthermore, we must distinguish two questions, both of which are important for prediction. Each model displayed in Chapter IV has both a specific and a general form, where the latter has a purely symbolic form, while the former contains numerical values. It is quite possible for a model to be acceptable in its general form, but not in its specific form, and we take up these questions in turn.

1. General Model Forms

In the general forms stated in the text of Chapter IV, the mathematical relations are truisms. In particular, if we take account of time, and put the same past "date" on every factor (including variables and parameters), they are actually identities; that is, they are true, and hold, because we have defined every factor so that the relations must hold.

However, because cost-estimating relations are to be predictive, the definitional truth of these relations, when applied to the past, tells us nothing about future accuracy or utility. Indeed, to discuss the latter question, we must distinguish between variables and parameters, and we touched on this topic in a minor way in the previous chapter. We also gave some visual emphasis to the distinction by using upper case letters for variables and lower case letters for parameters. Roughly, the importance of the distinction, from a prediction standpoint, is that if we wish to predict costs as defined, there are some factors (meaning variables) which we either choose, or predict outside the framework of the model, (such as the salary of faculty), while there are other factors (meaning parameters) which we treat as known in advance or fixed for prediction purposes.

It follows from this distinction that the models, in a predictive situation, no longer have the property of definitional truth, since the parameters, to be "known," must be based on some interpretation of historical data. Hence the models then have the property that they predict costs accurately to the extent that (a) the variables can really be chosen or, if not chosen, predicted well in some way not discussed;

and (b) the parameters, as actually estimated, reflect something which is indeed constant as between the past period and the period for which prediction is being made.

Variables. The variables of the models may be viewed as being of two kinds; that is, controllable and predictable, respectively, by the user of the model.* For the models shown, however, this distinction appears to be of dubious usefulness, since all of the variables can, to a degree, be predicted and controlled, particularly if we recognize the range of decision-makers who may be involved: the Government can control almost everything. All that is really important for our purposes is that the variables be controllable, or predictable, or both. To the extent that the variables (e.g., salary levels) are not controllable by the decision-makers involved, they can be viewed as being determined by general economic conditions.** From the standpoint of formal requirements of prediction, the variables are reasonable.

When we come to consider the issue of whether such factors as the faculty-student ratio should be treated as empirical constants, everything of course depends on how things are actually estimated, and the use which is made of the model. It is to these questions we now turn.

The models presented must hold if every factor in the relationships is defined for the same interval of time. For prediction purposes, the values of some factors in each model must be selected by the user, while others are determined by the model itself when put in a specific form.

2. Specific Model Forms

Suppose the faculty-student ratio is viewed as a constant, as in the models presented, but, for simplicity, it is the only constant. Suppose, further, we estimate that constant by looking at data for this year's actual faculty and student body. Finally, suppose that we wish to use the models for predicting next year's costs. Under these conditions the predictive capability of the model depends on whether this year's faculty-student ratio is a good predictor of next year's faculty-student ratio.

---

*The variables of these models with which we are concerned include numbers of students, salary levels and a factor which can be viewed as rental costs. In a more general context "costs" is also a variable--but that, of course, is what the relationship is constructed to predict.

**We feel no responsibility to undertake the development of a model for predicting general economic conditions as part of a study of cost factors in social work education.

One line of argument might be that this year's ratio is a poor indicator for next year, because the information we get from any one year has a chance component; so if, for this year, there was a large "chance" fluctuation, the observed ratio might be poor for prediction. A possible implication of this line of argument is that we can make a better estimate of the constant by using observations from a number of years. Everything depends, however, on what one views as the reason for fluctuation in the ratio.

There can be no doubt, certainly, that observed ratios will fluctuate over time. In our view, however, the use of current-year information alone may well yield a better indicator (parameter estimate) than multi-year information, at least with any feasible method of manipulation of the data. Obviously we cannot deal with, or even imagine, all possible manipulations of past data,* but the reasons for our view will perhaps become clearer later in this Chapter. Basically, our view is that, from a prediction standpoint, an estimate of the model parameter which makes it equivalent to this year's ratio is as likely to yield good predictions of next year's costs as an estimate based on a number of years of data.

As a matter of fact our position is the same for all of the factors we have identified as parameters. In each case we regard estimates based on current-year information as being just as good as, and perhaps better than, what might be obtained from multiple-year data, for purposes of estimating next year's costs. The only real prediction question, in our opinion, however, is whether--using one year or many to estimate the parameters--they have significant predictive capability. In other words, should the factors chosen as parameters be so viewed? Do they have stability and constancy? Is there reason to believe that next year's faculty-student ratio will be "like this year's"?

The answer is that we believe that (1) budgetary processes will ensure a marked similarity; (2) where budgetary processes cannot be assumed to have this property (i.e., applicant-limited schools) change will occur only slowly because change is difficult; (3) we are aware of no major factors which will tend to bring about change in general*; and (4) in individual schools, where change could occur by fiat, it may be possible to predict future ratios because of knowledge of what is being proposed. This last point is considered in the next subsection.

---

*Ranging from simple averages to complex mathematical-statistical manipulation of simultaneous relationships. The choice fundamentally depends not merely on the availability of data, but also on the theory underlying the postulated relationships. The possible interrelationships between statistical estimating and our theories relative to the processes being described are extremely complex. For a basic discussion of what may be involved see T. Haavelmo, "The Probability Approach in Econometrics," Econometrica, Volume 12, Supplement, 1944.

We believe that the factors of the relationships identified as constants or parameters are such that, when estimated via this year's observations, and utilized for predicting next year's costs, they are likely to be good enough for many purposes of prediction. Individual schools could choose to change them, but might then be in a position directly to estimate new "parameter" values.

3. Output Concepts And Parameters

So far we have been discussing the predictive capability of models in which "student-years" was viewed as the output; that is, our discussion has proceeded in terms of the parameters of the first four model-types presented in Chapter IV. The question we now take up is whether we can expect the same predictive capability for those models in which more complex output concepts are used, e.g., output of MSW student-years and Ph.D student-years, respectively. More concretely, if the faculty-student ratio (r) can usually be expected to remain more or less constant from one year to the next, can we expect the same to be true for the corresponding ratios (r_1 and r_2) for MSW's and Ph.D's, respectively?

First of all, it should be pointed out that there was substantially more variability between schools with regard to the ratios for MSW's and Ph.D's than for the combined faculty-student ratio. Secondly, we learned nothing about social work educational processes which would lead us to expect any stability in these individual ratios, except possibly sheer inertia. Thus, for example, the evidence on class sizes and on work load distribution clearly suggests that nothing like the same degree of constancy of parameters should be expected for the models with more complex output concepts. An additional insight into our judgments on this point is provided later in this Chapter.

We can put the matter somewhat differently. The nature of our judgment is that we can predict total costs per student-year reasonably well for next year, based on overall ratios observed this year. We cannot, however, expect to be able to predict very well the breakdown of total costs between various categories of output.

---

*The general constancy of the faculty-student ratio is clearly suggested by the data in the Council on Social Work Education's Statistics on Social Work Education, 1968. Considering all schools there is a very high correlation between faculty and student numbers, especially in full-time equivalent terms.

In addition to the non-predictability there is also, of course, a serious question about the meaning which is to be attached to such breakdowns of total costs as that involved in MSW versus Ph.D. As discussed earlier in this report, MSW's and Ph.D's may be regarded as having joint costs of production and, in such a case, it is not clear that it is even meaningful to separate their respective costs.

The parameters of the more complex output models are viewed as having low predictive capability. Because of joint cost problems, the breakdown between MSW and Ph.D costs, etc., may not be meaningful.

4. Uses of Models

The principal use of models of the kind presented in Chapter IV is, of course, for prediction. We can think of the question of use from the point of view of two different kinds of users, which we consider in turn.

Government. Under the kinds of conditions which we visualize, the Government would not have model parameters for named schools, although it could conceivably have individual school models if anonymity were preserved. Alternatively, the Government might have an aggregate cost-estimating relationship based on the models for individual schools. In either case, the models could be used, subject to the qualifications stated earlier, for the estimation of aggregate resource requirements (for the Nation as a whole) to produce social workers. For certain kinds of budgeting, then, the models may be useful to the Government.

If we turn now to possible uses of the models for policy determination, presumably a great deal depends on what kinds of policies are conceived. It should not be assumed, however, that mere ability to relate the elements of a proposed policy to the kinds of factors which appear in the equation insures that the models are appropriate. Thus, for example, it would be quite improper to use these models to predict the reduction in resource use which might be achieved by a Government policy related to the faculty student ratio. To meet such needs models with different kinds of properties are required, and the required properties are discussed later.

University or School. University or school use of the kinds of relations presented in Chapter IV may be based upon models which pertain to its own operations or upon models which describe the operations of other schools. In the first of these situations, the models can be used for prediction of costs in a straightforward way, although, for short-term prediction, they are likely to have better devices available, since they can themselves determine budgetary levels.

On the other hand, if a school had available to it the models for other schools, we believe that the information could be quite useful. The models present, in a summary form which preserves certain kinds of confidentiality descriptions of important attributes of the operation of schools of social work, and it seems reasonable to assume that it might be of practical help to a school in charting its own course.

The principal use of the models is for prediction of costs on an aggregate basis, in the case of the Government. For schools, the principal interest is informational, particularly in terms of the comparison of the parameters of their own models with those of other schools.

C. EXPLANATORY CONTENT OF MODELS

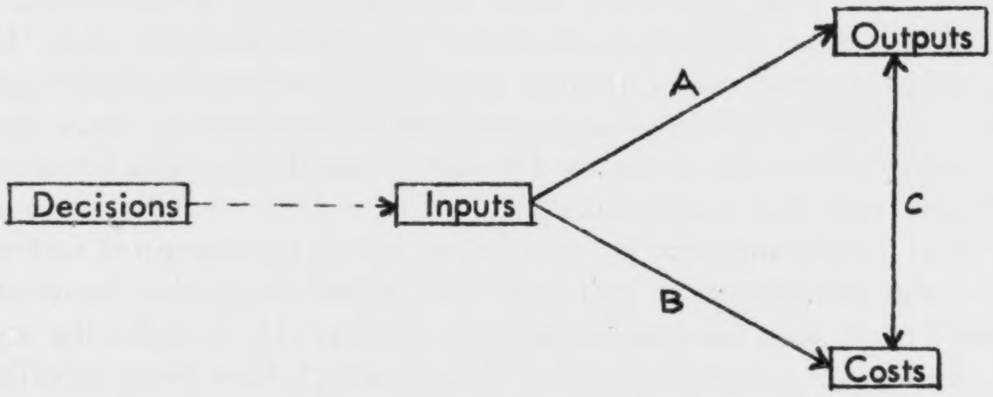
Models may, of course, be useful for explanatory as well as predictive purposes; that is, under certain conditions a model may assist understanding by identifying the factors which really matter, and their relative significance, in determining the value of a dependent variable such as costs. Up to a point the models may be regarded as having such content: in a certain sense the critical factors are the ones identified, and it is easy to see how important these factors are relative to each other. Thus, for example, if the faculty-student ratio is high, we know that costs will tend to be high, and we can see, in any given case, how important the agency contribution to costs may be. The models are not, therefore, totally devoid of explanatory content.

At the same time, however, when we look closely at the model, and begin to ask questions about its various elements, it quickly becomes clear that there are many important and rather obvious questions on which the models give no help whatever. We can illustrate what is involved by considering, once again, the faculty-student ratio--which we tend to use in our illustrations because it is so important, at least from a cost standpoint. The models treat the ratio of faculty to students as a constant; that is, as a factor not to be explained further. At the same time, the components of that ratio are, rather obviously, factors which the school itself must, to a substantial degree, choose. If, to make the argument more pointed, we restrict ourselves to those schools which have been described as "funds limited," it seems fair to say that both the numerator and the denominator are selected by the school, and, in that sense, should be viewed as independent or controllable variables. If the ratio is a constant then the number of students and the size of the faculty must be chosen in such a way that constancy is maintained, but the models tell us nothing about how the values of these variables are, in fact, selected.

Perhaps more simply, we know that the schools do vary in size over time, which requires the number of students and the size of faculty also to vary. Is this variation random, or is it achieved by design? It seems clear that the models are largely descriptive, rather than explanatory.

The basic issue here is, indeed, the same one to which we alluded a number of times in Section B of this Chapter. The question is whether the models describe how schools actually operate, or whether they merely describe the results of that operation. There may not be any sharp line between these two ideas, but there are certainly important differences of degree. Consider, for example, what is involved in the models for establishing the costs of MSW student-years and Ph.D student-years, respectively. When we ask whether these models will predict, we are, in fact, raising the question of whether the parameters have any meaning. We are asking whether the school really chooses to operate with the observed ratios for MSW's and Ph.D's, respectively, or whether these are mere happenstance, and the result of factors not identified. A closely related, but not identical question is whether the school can, in fact, do what is implied by having two separate cost models for MSW's and Ph.D's; that is, whether they can control each independently. We note that the answer to the last question is required in order to resolve the joint-cost question referred to earlier.

Perhaps the best way to describe what is at issue is to compare the characteristics of these models with the models which were contemplated earlier in the project. The figure below can be used to elaborate the distinctions.



If we know relations A and B,
then C is a logical consequence.
But the relation A is not implied
by B and/or C.

In the central portion of the diagram the box labelled "Inputs" represents those factors which are controllable by the school or university, such as faculty. The box labelled "Outputs" refers to such measures as number of MSW's, while "Costs" has the meaning discussed in the previous chapter. The word "Decisions," in the diagram, is intended to suggest that inputs such as faculty may, in some contexts, be best viewed as results of other decisions, rather than direct choices.

In our approach we contemplated the construction of two sets of relationships, one connecting the inputs to the outputs, and the other connecting inputs to costs. We also said that, if we had these relationships, we could, by mathematical manipulation relate outputs and costs. The models we have actually constructed can be viewed as relations between outputs and costs, or even, under some conditions, as relations between inputs and costs, but they are clearly not relations between inputs and outputs.

Now the relations between inputs and outputs are, in fact, those which describe the educational relationships which are essential to more meaningful explanation of why things are as they are. If, for example, we ask the question, "Given that we have a faculty of size X (input), how many MSW's can we produce?" we have no answer because we do not know what the fundamental constraints are. We can, of course, say that this is "explained" by the faculty-student ratio, but in the face of variations in the internal aspects of school operations, which we have described, it is difficult to see how the ratio explains anything. We can use it for prediction, and say that it tends to remain constant, but constant or not, it is something which itself requires explanation.

In somewhat different terms, if we had input-output relations, it would be clear, at least up to a point, what things had to be controlled and changed about the educational process in order to change its outputs. Alternative methods of operation could be described and evaluated in terms of output. At a certain level we would know something about educational causes and effects.

The models must be judged to be weak in terms of explanatory content, at least compared with what was originally conceived as possible.

D. IMPLICATIONS OF ABSENCE OF INPUT-OUTPUT MODELS

If our sole concern were with the prediction of costs, the absence of input-output relations would be of little consequence. Presumably, however, our ultimate interests are in altering the relations between costs and outputs, which means, in turn, changing some feature of the relations between inputs and outputs.

It may be important to determine, therefore, why meaningful input-output relations--aside from trivial ones like faculty-student ratios--have not been established.

The first point to be made relates to the number of kinds of output-models we developed in Chapter IV. In normal production processes, the outputs which are sought are clearly identified: in some sense, the object of the game is clear. In the pilot schools, however, it is not clear what the schools themselves viewed as the outputs of the process. Another way to say this is that objectives were personal rather than organizational, even when they were couched in terms of categories like MSW's.

Secondly, to establish relations between inputs and outputs, it is necessary to know what the inputs are. Not only is it necessary to know, qualitatively, what is being used, but it is also necessary to know how much is being used, and what determines its degree of use. While it is obvious that the principal input pertains to faculty, and we can count heads, the variations in the extent of use of each faculty member (as represented by work load assignments), and the fact that there is no measure or indicator of how much total work any faculty member does, both suggest that a head count may be a very poor indicator of even the principal input.

Thirdly, no description of a production process can have the character that it describes literally every input. If, for example, we ask how many students a classroom can hold, it is obvious that the answer depends on what size the desks or chairs are and how they are arranged, yet for the kinds of purposes we have in mind, no one would dream of constructing a model which showed alternate arrangements of desks, even in terms of a statement of room capacity--to say nothing of the effect of room arrangement on the quality of the educational output. When a relationship is postulated between input and output, it means that the outputs shown are the maximum consistent with the specified inputs; that is, we solve all of the problems arising from the large number of variables by saying that we will choose them so as to achieve the best result. We know of no reason to believe that schools are operated with any such concept of efficiency. For most schools it appears not to be even a relevant question whether greater output could be achieved with the same resources, partly because there is no accepted concept of output.

Finally, what we know of the nature of decision processes in schools suggests to us that it is improper to conceive of the graduate social work process as a production process. A production process for an organization implies that there are acknowledged outputs, acknowledged inputs, and a recognition that what should guide the choices made is the desire to maximize output for any given input. The input-output concept is one which applies to production operations, and that the schools clearly are not.*

Graduate social work schools are not viewed by their participants as production processes. They lack acknowledged outputs, measured inputs, and a concept of efficiency connecting the two.

We do not mean to imply by any of the foregoing that schools are not, in some sense, cost conscious. Some schools with which we had contact were very much aware of budget as a constraint on their operations, but this is very different from saying that, given the budget, it occurred to them as desirable to try to get as much output as possible for the given budget. Schools are cost conscious in the same sense as families are cost conscious: they must live within a budget, but their behavior, while it may have important kinds of stability (analogous to the faculty-student ratio), cannot be described successfully in terms of inputs and outputs.

Under current modes of operation the real determinant of costs of social work education is the budgetary process within the university. If a school can "justify" a certain budget, whether in terms of faculty-student ratios or any other factors, that is the amount they will spend. If the budgetary process itself does not impose a requirement to obtain any specifiable level of output for the given budget, there will be no forces operating making for efficiency; and if a constraint is effectively imposed (e.g., a ratio of 8 to 1), it is that constraint which will determine output for the given budget. There are no concepts of efficiency which would drive the faculty to achieve 9 to 1 or 10 to 1, say. It is, we believe, highly significant that the school with the lowest cost was one which, by the university's budgetary processes, was compelled to reduce the gap between costs and revenues, and hence to move in the direction of efficient operation, for in the other schools we could identify no such incentive.

The principal determinant of differences in unit costs (e.g., per student-year) between schools may be differences in the budgetary processes to which they must adhere. The lowest cost school was the one in which the budgetary process suggested that it would be a good thing to increase outputs with the same inputs.

---

* It should be noted that the point here has nothing whatever to do with the intangible nature of educational processes, for there are many intangibles for which good input-output relations have been developed.

Chapter VI

GRADUATE SOCIAL WORK EDUCATION AS A PRODUCTION PROCESS

A. SUMMARY

There are many indications that society is moving in the direction of holding educational institutions accountable for their efficiency and effectiveness. Eventually this will compel educational institutions to behave as production processes rather than as consumption units. This change should be welcomed by those who are genuinely concerned about the adequacy of social work manpower, but effective improvement is not likely to take place for many years unless graduate social work educators assume the role of the pioneer and act as agents of social change.

To bring about such change social work educators will need to lay the foundation for the development of a concept of the efficiency of the schools. Critical to the achievement of this goal is the establishment of school objectives, which constitute basic criteria for the application of the efficiency concept. It is recognized that objectives may differ in basic ways, quite legitimately, from school to school, so that it is necessary to be rather general in this report in describing how objectives "should" be stated. It is suggested that proximate, operational objectives, consistent with what was learned in the pilot schools, can be classified under the headings "student related," "new knowledge" and "community service," respectively. There are, however, many options with respect to content, measurement and level of detail, which importantly influence how the school should proceed.

It is pointed out that many possible objectives of schools cannot be dealt with unless the production process is viewed as taking place over a substantial period. Problems of evaluating costs have the same long term characteristic (as in the case of tenure). It is suggested that schools look ahead for five years for purposes of determining resource levels, even if this means that some things must be dealt with crudely.

In addition to choosing objectives, the schools must decide what resources or inputs are of concern, since it is not obvious whether schools "should" worry about, say, costs incurred by agencies. Resources are viewed as those things which make it possible to achieve the objectives, and which are not, or may not be, obtainable without expenditure. The way resources should be described, therefore, depends importantly on the objectives. In addition, since it is essential to establish "causal" relations between resources and objectives (inputs and outputs), the way these should be specified for a particular school depends on the data it has, the work it can apply, and so on. The principal classes of inputs are identified as faculty and non-faculty staff of the school, agency instructors, students, space and supplies.

In order to establish the essential dynamic links which make it possible for a school to move toward specified objectives via the inputs, certain classes of "intermediate" variables are recognized, namely, funds raised, curriculum developed, promotion (to attract applicants and faculty), and faculty developed. Each of these is important for next year's education but must be accomplished this year. Each of these is also viewed as an "activity" to which inputs can be assigned. Other important groups of activities suggested for treatment as input-output relations are: instruction, preparation for instruction, research, community service, non-instructional advising, and other administration.

The problem of establishing the relations between inputs and outputs is considered. Because of the previously mentioned differences between schools, no two will have the same problems of establishing relationships. A few kinds of situations are discussed illustratively, and it is shown that relations may be empirical, or logical, or, in the most critical illustration--instruction--the relations must be established by judgment or guess, because of our basic ignorance of educational processes. Even though output quality cannot be measured, educator's judgments on how to achieve quality can determine these relations.

It is suggested that the input-output relations can evolve from a device for ensuring efficiency (no waste) to one which assists in making the "best" choice among a large number of alternative long-term plans. This requires an increase in model complexity and perhaps in level of detail and tends to encourage the use of computers for management assistance. Such possibilities are not of much interest until the basics have been accomplished: the establishment of objectives, inputs, and relations between them; and an orientation to efficiency as a goal. Outside help can be given in accomplishing the transformation, but will not be successful unless the schools are committed to change.

B. SOCIAL WORK EDUCATORS AS AGENTS OF CHANGE

In the previous chapter we were concerned with the fundamental limitations of the kinds of cost-estimating relationships it is currently possible to provide, in connection with the costs of graduate social work education. These limitations, it was suggested, are due to quite fundamental characteristics of the way the schools are operated. In some cases, and to some degree, it may be appropriate and sufficient to say that schools are operated in an irrational manner--if, for example, there are clearly established objectives and it is "obvious" that people are doing the wrong things to achieve these objectives. On the other hand it is quite common, in our experience of other organizations, for this to be so, yet this does not prevent the construction of useful cost-estimating relationships, as we have pointed out. The root problem is that graduate social work education is not perceived, by many of the participants in it, as a production process at all, in which there are socially acknowledged outputs (ends), socially acknowledged inputs (means), and a concept of efficiency in relating the two. Actual efficiency is another matter entirely.

We could, of course, simply let the matter drop there, and report that, as we observe them, schools are operated more nearly as family units than as factories, and that it is just as inappropriate to speak of school objectives as it is to speak of family objectives. Under these conditions, and if the world is accepted as it is, we would say simply that, if we can collect information about enough schools, we can then estimate such quantities as "what the schools spend, on the average, for graduate social work education, master's level, per student," just as we can survey families and find out what is spent for the care and feeding of the average child, aged five, and white. We do not ask how "efficiently" the money is expended for the five-year-olds, or what our "objectives" are in feeding them; and we should not do so for social work education, either, if we accept the school world as it seems to be.

On the other hand, there is increasing evidence that the educational world is not being accepted as it is. Student uprisings are but one symptom, and perhaps not the most significant. The President of the United States has himself, in recent months, raised serious questions about how effectively educational funds are being spent. More and more, especially in the larger state school systems, such as those of Michigan, California and New York, central systems of accounting, measurement, reporting, and management control are being instituted. Some educators themselves seem to be very much concerned, as, for example, Edward H. Levi, President of the University of Chicago:

> "When you look at the whole system you realize that we are involved in a terrible waste of educational resources and of human lives."*

It seems clear that there are many forces already at work to change the character of all educational processes, and, it might be argued, the operation of graduate schools of social work will have to change as well, in time. Sooner or later they will become production processes, with applicable concepts of efficiency.

Our posture, even so, might well be that they will require another 15 or 20 years, and, when that period has elapsed we will build more satisfactory cost-estimating relationships, if desired, to assist the decision-makers of that time, but we can do no more now than describe things as they are now. That is not our view, however.

For one thing, we believe that it is highly desirable for graduate social work education to be viewed as a production process, in which it matters to society, even if not to the actual participants in the educational process, whether a teacher with five students could just as effectively be teaching ten; that is, we ourselves are not neutral with respect to the question of whether schools should continue to operate as they have in the past. Secondly, we find it impossible to believe that anyone with a genuine concern for the adequacy of social work manpower could advocate that the schools should wait until they are compelled to change the way they do business. Thirdly, it seems to us that, of all the educational fields or disciplines which might be asked to undertake a pioneering role, it is most reasonable to ask it of social work education, with its emphasis on the achievement of social change.

This chapter is, therefore, addressed to those social work educators who perceive the need for a quite fundamental reorientation in the way that schools of social work do business, and who are willing to undertake the intellectual agony and socio-political turmoil which commitment to such a course would entail. It will require doing things at the school level which, so far as we are aware, have never been done before, in social work or elsewhere, and which, at present, no one really knows how to do. Above all, it requires a willingness to make a beginning.

In this chapter we try to indicate the direction in which, we believe, schools need to move or evolve. We want to make it clear, however, that we have no blueprint for how schools ought to operate, nor have we attempted to develop one. Indeed, we do not even suggest to educators what techniques they ought to use to begin to move in the direction indicated. In effect, all that we attempt in this chapter is the outline of a very simple planning mechanism, whose principal intent is to illustrate what is involved in thinking of social work education as a production process, for the major need is for educators to think in that way. In a sense what we will be saying is: "This is a way to think about certain kinds of problems, a way which we think should be adopted as a proximate goal," but there are many alternatives to our model, some much more sophisticated.

---

* Quoted in the Los Angeles Times, July 6, 1969.

Note that we describe our planning model, as a "goal," because we ourselves cannot supply any of the things which are required to make it operable, and we do not wish to minimize the difficulties in achieving operability. But the important thing is not to achieve operability of this, or any other mechanistic device which may be presented, but to start to make day-to-day and year-to-year choices which reflect an awareness that there are valuable resources being used in the educational process, and that they can be used more or less efficiently to achieve social or organizational goals.

A new way of thinking about education is on the horizon which will eventually force corresponding changes in graduate social work education. These changes are, however, fundamentally desirable in their own right, and should be welcomed by those concerned with the question of whether our social work manpower supplies are adequate. Social work educators, above all others, should take the lead in bringing these changes into being. This chapter tries to show how social work educators can begin to think of their problems in terms of the concept of efficiency.

C. OBJECTIVES

1. Fundamental Significance

If an individual is called upon to make a choice, there are many circumstances in which it is simply not meaningful or useful to speak in terms of "objectives." In making a choice from a menu, for example, it is usually not useful. Why eat steak rather than fish, say, or vice versa? The most satisfactory answer, intellectually, is usually "because I want to," rather than to achieve any specifiable objective. Of all the marriages that take place, how many could properly be said to have taken place "to achieve an objective"?

In economics this problem is handled by making the fundamental distinction between consumption and production. Consumption decisions are "explained" by saying that the individual consumer can be described as having basic characteristics called "tastes" or "preferences," and that these determine what he will do. If he chooses steak over fish, in other words, his only rationale need be that he wants it. On the other hand, if we shift the problem only slightly and ask "why did the restaurateur buy the steak?" the problem changes its character, because we would suspect his sanity if the only answer he could give was "I wanted to." Both decisions involved buying meat, but we classify one as consumption and the other as production. One is assumed to have a specifiable (although perhaps mistaken) rationale, the other choice is determined by intrinsic, personal tastes. For the restaurateur we would probably say something like "He bought the steak to sell it to his customers and thereby make money."

A production process, then, is by its nature, something which can be said to exist only when it is appropriate to speak of "objectives," although we have yet to define the term. Existence is always in doubt, however, whenever one speaks of individuals, because, human beings are indivisible, and it is hard to tell where "preference" ends and rationality begins.

In complex production operations, involving the interaction of many people, however, it is a different matter. In this setting "objectives" may be taken to represent the kinds of things which "the school" is attempting to accomplish, if anything, and in terms of which meaningful organizational dialogue can take place. Things get done, in such a situation, or at least talked about and justified, in terms of their instrumental character: "We should take action A because it helps us achieve objective Q better than would action B," rather than merely "I prefer A to B." In a world in which the latter is sufficient there is no meaningful concept of efficiency or cost. To be sure, the concepts of efficiency and cost do not preclude the possibility of an objective such as the following: to run the school for the well-being of the faculty, maximizing their income and minimizing their commitments of time to the school, with disputes affecting the allocation of the spoils to be settled by committees of peers; etc. All that objectives can provide is the criteria by which the relative desirability of courses of action can, in an organizational setting, be discussed in an "impersonal" way. Without such criteria there is simply no meaningful way to say that it is better for an organization, such as a school, to do one thing rather than another.

We view objectives, then, as the criteria in terms of which organizational success can be judged. Without them no more can properly be said about a school's costs than about a family's costs. Without them schools must be viewed as consumption (rather than production) operations, with no rationale for existence except the well-being of the participants. Note that, even if the students' rationale for attendance is, universally, that of personal satisfaction or personal development, this does not mean that the schools must or should view themselves as consumption operations. The situation is not unlike that of the theater, which most people attend for "enjoyment," presumably, but which is operated with organizational objectives of a different kind (e.g., to make money) and in which concepts of production and efficiency still apply; e.g., empty seats are bad.

Objectives can be "positive," (e.g., to increase number of students), "negative" (e.g., to reduce tenured faculty), or "neutral" (e.g., to achieve the "right" student-faculty ratio). They can be couched in terms of probability and/ or in terms of certainty, or both. They can be near-term or short-term. They can be relatively general or relatively specific. They can be relatively complete or relatively incomplete, tangible or intangible, quantitative or qualitative. In short, there are no general characteristics which the concept of "objectives" implies, except that they be accepted as important criteria for guiding choice.

It may be seen that there is an important relationship between the concept of "objectives" and that of "outcomes" or "consequences" discussed earlier in connection with the elements of decision-making, in that the values of variables describing both are viewed as causally related to the choices made.

Schools (faculties) must have acknowledged objectives if they are to conduct themselves as production operations, relating means to ends, rather than as consumption operations (which are their own justification). There are, however, no general specifications which can be laid down for the way in which objectives ought to be stated, although they must provide at least partial criteria for ranking actions.

2. Objectives of Schools

What "should" the objectives of schools be? We do not know, and we are not sure that the answer could be meaningful coming from outside the schools themselves. Ultimately, to the extent that objectives have not been explicitly formulated, schools will be compelled by events, we believe, to establish their own, or accept "imposed" objectives. Here it is our intent only to suggest a set of objectives which seems to us to be consistent with what we learned in the pilot schools, and to include, so far as we are aware, all of the things that were discussed as possible objectives. However, what we shall say can be only illustrative, since, in our conception, every school must select its own. Some schools may select objectives which cannot be comprehended by our descriptions, but, as will become obvious, for this to be so they will have to be objectives of a different genre.

To be useful in practical situations schools must state their objectives in terms which, operationally, can be given some meaning. Thus, a school which declares it as an objective to turn out MSW's, has stated an aim for which there is an obvious measure of degree of achievement. On the other hand a school which declares that it wants to be "the best school" has stated an aim which, in that form, will not serve it well; for, in every practical situation, the problem of what this means will have to be thought through anew, sometimes by different groups, and with no assurance even of consistency. When such statements were made to us we attempted to obtain amplification, so that feasible measures could be identified which might describe real intent; for, without such definition, such statements can become a device for avoiding the production view of educational processes.

After translation of this kind all of the possible objectives which were mentioned to us could be classified under three headings; namely, students, new knowledge, and community service, respectively.* To some, it should be said at once, the latter two were merely instrumental, that is, they were viewed as important only because they were seen as having a role with regard to the achievement of the student-related objectives. This distinction is not, as we shall show, likely to be a very important one in practice.

In the pilot schools it seemed to be possible to classify objectives under three, perhaps non-independent headings: students, new knowledge and community service.

Student-Related Objectives. Everyone with whom we discussed the subject in the pilot schools thought that appropriate school objectives would include something related to students (directly or indirectly). These objectives were generally, but not invariably, stated in terms of properties--which we shall describe--of trained students. There was at least one individual, however, whose views we take quite seriously, who thought that an attribute of the "best school" was that it would attract the best students; that is, an "objective" was to attract the best students.

How could the best students be attracted? By turning out the best students!** Under this hypothesis we can see that, as in other aspects of the educational process the only practical difference between viewing the objective as being to attract the best students or to turn out the best students is a slight displacement in time. Of course, if it were true that the mechanism for attracting the best students were really of a different kind from that postulated, it might very well matter how the objective was stated.

---

* At least one university possessing a school of social work has recently adopted a set of university objectives which correspond precisely to this. Evidently it is felt to be general enough to cover anything that should go on anywhere in the university.

** The basic view here is, of course, that the principal determinant of the characteristics of the trained student is the characteristics of the untrained student, and that differences in education have relatively inconsequential effects. To the extent that this is so much of the concern with "quality," mentioned below is misdirected. This is a hypothesis which deserves early attention as a matter of research strategy.

In a methodologically related instance, some stated it as an objective to attract minority students. In this case, however, there was no mention of objectives with respect to trained students of this class. Here we see the potentially critical role of apparently minor changes in statements of objectives. If objectives are stated in one way ("attract") the implication may be profound for either the quality of the "trained students" or the "traditional" high pass rate; if stated in another way ("train") they may be profound for the educational process itself, involving, possibly, wholly new materials and educational procedures, and, perhaps affecting quality nevertheless. (Perhaps it was assumed that the whole dilemma would go away if students could be attracted who were both "minority" and "best.")

In general, however, objectives which were student-related pertained to trained students. Some, as pointed out earlier, were satisfied to speak of objectives in terms of MSW's and Ph.D's. Others made distinctions between knowledge-builders, practitioners, leaders, and teachers; or in terms of traditional or untraditional concentrations. Almost everyone referred, in one way or another, to the "quality" of the trained students (and differentiated this consideration sharply from that of number) although it is not clear whether quality was viewed as a characteristic independent of designations like "leader" (that is, can there be a "leader" who is of poor "quality"?)

These distinctions must detain us for they are, in our opinion, important contributors, in practice, to the irrationality of some educational processes. While it is true that educators appear to have, as they must, ideas about what characteristics of the educational process are significant for quality--many anomalous situations are justified in those terms--it is also true that actual observations on quality (or leadership or teaching capability, etc.) of the trained students are, so far as we discovered, absent. Thus, the assignment of only three students to a full time field instructor is justified in terms of individual, subjective determinations of "quality," and one is left to wonder about the welfare of the nine students who are consigned to the mercies of a harder-working or less influential instructor. In other words, because the basic dimensions of "quality" are unspecified and unmeasured, there is a convenient rationalization available for many questionable practices.*

---

* One of these days we may write a treatise on "The Scapegoat Theory of Operations," which would be based on our experience, and would show how, when

We do not suggest that quality is not of the highest importance. We do suggest, however, that it not be employed as an objective unless there is a corresponding willingness to specify, in operational terms, what "quality" is to mean. We could suggest here some things it might be taken to mean, but we think, once again, this is a problem for schools themselves; and if they are unwilling or unable to specify what they think it ought to mean, for the present, (till we learn more), then the concept should be abandoned.

In any event, the directly student-related objectives we encountered involved, for the most part, (1) the classification of students into groups, involving degree, concentration, race, teachers, etc., and, if operationally definable, quality; and (2) the counting of the numbers in each group. If student-related objectives were the only ones, and if the size of each group could be estimated for each action being considered, we would have a basis for rational, organizational choice. The number and kinds of groups to be distinguished in any school, of course, depends on the objectives established for the school. Thus the particular dimensions and measures, if any, of quality which a particular school viewed as significant would dictate the nature of the grouping in this area. The only limit on the number of groups to be recognized is a practical one: the time, money and knowledge to permit useful estimation. In the most extreme (and visionary) case a school might have objectives which distinguish every individual student from every other student; e.g., in terms of his characteristics on entering and leaving the school, respectively. Initially, it may not be possible to do better than distinguish degree level and concentration in an operational system, with other devices we shall suggest being used to introduce "quality" considerations.

Most student-related objectives can be described in terms of groupings of students, by degree, concentration, minority group status, quality, etc. The degree of achievement of such objectives would then involve establishing the size of each group.

---

nothing better is available, operating organizations develop a convenient scapegoat to account for irregularities and inconsistencies in their operations. This scapegoat always has the property that it is difficult to observe satisfactorily, and its power cannot be disproved, except by constructing more appealing explanations of observed irregularities. Marketing managers appeal to the "quality" of the salesman to explain success or failure; mining companies do likewise with respect to "quality" of the ore; the farmer can always point to some feature of the weather which wasn't just right, for what is?

The Role of Time. Before leaving the subject of student-related objectives, it is necessary to consider the role of time. Obviously, a school which has objectives with respect to, say, Ph.D's, and wishes to improve their quality or increase their number, cannot expect this year's actions (whatever their nature) by themselves to have much effect in achieving the objectives. In other words it may be necessary to consider actions which continue over a long period. By the same token, however, it is logically and practically necessary to specify objectives over a corresponding period.* This means we must distinguish between Ph.D's this year, next year, and the year after, just as for other "groups" which the school may choose to distinguish.

How far ahead should a school look in specifying objectives or actions? There is no satisfactory theory which may suggest an answer to this question, although it is usually assumed to be a part of rationality to look as far ahead "as possible," that is, to estimate the distant as well as the near-term consequences of current choices. In our judgment, given the length of the graduate educational process (e.g., for a Ph.D) as well as the time-lags which can be expected in achieving major objectives, it would be foolish not to look ahead for, say, five years. In a formal planning or estimating sense it might also be foolish to look much further ahead, because the limitations on our predictive capabilities are so severe.

It should perhaps be noted that here, as in the rest of this report, we are concerned with decisions or choices which have, or may have, major cost implications. It is true that, for some purposes, it may be best to specify objectives which are short-term in nature. Thus, for example, classrooms and class hours must be established for, say, the quarter or semester ahead; and while such choices might conceivabley have minor effects on costs and perhaps even on quality or quantity, it is hard to think of these as being serious. Therefore it may be best, practically, and for some purposes, to look ahead for only a quarter or semester. The major cost questions, however, obviously involve the size and use of the faculty, and these involve objectives which must be viewed as "long term" in nature.

The absolute necessity for this long-term point of view is established when we consider the problem of tenure. How can a school ("the dean") look at the tenure problem rationally? The only way this can be done is to associate long-term objectives and long-term costs with current choices, so that the possibility of a school's being stuck with a tenured lemon will be taken into account at the time choices are made. The problem has, in fact, a marked similarity to the problem of making choices about a school building where it is obvious that the expenditures are being incurred essentially at the time of the decision, but the possibility of future obsolescence must be considered. A building can be disposed of, however, usually legally, which may make it much less of a problem than an unwanted faculty member with tenure. The moral is that, for the decisions which really matter for the costs of graduate social work education, it is essential to look ahead as far as possible, to predict both costs and the degree of achievement of objectives.

---

* Note once again that an "objective" can, but need not, be in numerical form, so that, for a school to have objectives with respect to MSW's next year, or ten years from now, it is not necessary to say that it would like to turn out precisely 153 or 217. This is, in fact, often a very poor way to state objectives.

Objectives have, in addition to qualitative and quantitative characteristics, important time dimensions. These dimensions must, like the others, be selected by the school, but it is clear that there are major cost and other consequences of school decisions which cannot be dealt with adequately in a short-term objectives framework. Objectives covering five years are thought to be reasonable.

New Knowledge. In addition to time-phased objectives with regard to "groups" of trained students (i.e., student-related objectives), individuals in some schools suggested that it would be appropriate or desirable to recognize, as a school objective, the production of new knowledge, or research. One argument for this was simply in terms of the effectiveness of teachers, who were seen as having an obligation to help produce practitioners who would be effective in the future. In order to do this, social workers' future problems had to be foreseen and methods for coping with them developed and, ultimately, taught. Hence the need for research and new knowledge and its role in the activities of the school.

In this view, it may be thought, research is not really an objective, and should not be so classified. However, if we think of the problem in terms that are explicitly time-oriented, we could describe the same set of beliefs as follows: we must produce new knowledge this year, and next year and the year after so that three, four or five years from now we will turn out practitioners who are not obsolete at graduation. In this formulation the fact is that a research "output" is seen as being desirable every year, and, as a practical matter, if this interest is serious, we must measure or evaluate this output on a current (say annual) basis.

This is, of course, precisely what we would say if research is viewed as being desirable "for its own sake," or perhaps because it is an attribute of the "best school." Further, if "quality" of trained students is an objective, and research is believed to influence this quality, we should still have to recognize the relationship even if that is not really "why" research is important.

From a practical point of view, then, research can be though of as an annual objective, which, for some, must be weighed against other contemporaneous objectives (such as trained students); while, for others, its interest may be primarily as an indicator of what may be expected with regard to future trained students.

Research or new knowledge is, of course, an idea like "quality," in that it is not clear what it means, or whether it can, in any degree, be quantified. However, to the extent that, like quality, it is taken seriously as either an ultimate or interim objective, it is important to be as specific as possible about its dimensionality and perhaps even to agree on procedures for measurement. It must not be thought that the situation is one of black or white: either it can be measured or it cannot. To the contrary, the likelihood is that, like quality, ways can be found to measure certain of its attributes. It is also possible that, in time, initial ideas on measurement will be overtaken by new ones. So measures may be crude, incomplete and temporary, but if research is a serious school objective the effort must be made.

We confess that it is not clear to us even by what standards research should be distinguished from some other kinds of activity which are not usually so classified. But the question is not, fortunately or otherwise, what we think research "really" is, but what the schools think the objective really is. Is an expository paper really research? Well, if expository papers are viewed as desirable and worth the use of any university resources, they can, without difficulty, be classified as research. One pilot dean, whose opinion we respect highly, stated that it was quite feasible for a social work faculty to rate its own members with respect to research output; that is, there would be substantial agreement. If this is so we are encouraged to believe that, like quality, it is something the schools can do something about, besides discuss its desirability.

In this chapter is is assumed that, even if there is no agreement on how to measure research output it is still desirable, for a number of reasons, to measure research input, that is, the resources devoted to it, such as faculty time. Sooner or later, we (schools) will want to relate research input to research output--so far as possible. The most important reason for having an interest in research input, even if we cannot measure research output, is that it interacts with other uses of school resources.

It is difficult, but perhaps not impossible, for schools to begin to quantify their research output. In any event it is desirable to quantify the use of resources for research.

Community Service. Virtually everything that has just been said with regard to research applies equally to community service. To some it is essential, in the long run, if adequately trained students are to be produced, while (a few) others view community service as an end in itself. In either event, if one wishes to answer the question, "What progress was made *this year* toward the achievement of objectives?" we need to "track" community service.

As in the case of research, measures of output are highly desirable, perhaps not impossible to establish, and probably highly imperfect. As in the case of research, and for the same reasons, it is important to know how much of school resources is devoted to community service.

Measures of the use of school resources for, and the results of, community service activities need to be established.

Before leaving the subject of objectives it seems appropriate to reiterate that (1) the three *classes* of objectives discussed seem to be consistent with any "school objectives" which arose in conversations at the pilot (and some other) schools; (2) at least three variables are required to describe them in any one year, so a formal five-year plan would imply a minimum of 15 measures of output, but every student "group" which is distinguished would add five more, as would any one measure of quality, or any additional measure of research or community service output; (3) the objectives are *school* objectives, which, in turn, are to guide the principal choices, made by the school, and which should, as a practical matter be selected by the schools themselves; (4) perhaps the most critical "objective" of all is subsumed in thinking of schools as production operations, namely, that it is desirable, for any specification of school outputs or objectives, to minimize the use of socially valuable resources (since they can be used to achieve other--unstated--objectives as well).

D. RESOURCES

1. Fundamental Significance

Resources are viewed as those items which (a) are important, or may be important, in achieving objectives, and (b) require, or may require, expenditures by the university. In a production operation, efficiency *means* getting as much as one can of the objectives, with given resources; or, with given objectives, to achieve them with minimum resources. We can put the same thing in decision-related terms by adopting formal postulates,* but the basic point is obvious and need not detain us.

However, for the proposition to be meaningful there must be some established or accepted concept of what the "resources" are. The principal university or school or agency expenditures are, of course, expenditures for people. Similarly, the principal resources from the standpoint of achieving objectives are also people, at least within very broad limits (that is, no one is likely to want to consider keeping classrooms at a temperature of 25 degrees, say, at which point it may not matter about the number, quality, and use of instructional staff). We consider "people" and "other" resources in turn.

Just as there must be established school objectives, there must also be an established concept of what resources are pertinent.

2. People

The people who may, realistically, be viewed as pertinent by schools are of several kinds, although all have in common, of course, that they are strongly influenced by the actions of the school. The principal candidates would appear to be faculty and non-faculty personnel of the school itself; personnel of the university who are not a part of the school structure; agency personnel; and students.

Now if asked whether, in some moral sense, one or other of these groups "ought" to be of concern to a school, we have no answer, any more than we have to a question about "proper" objectives. However, to the extent that any of these groups (or other resources) are deemed significant in achieving objectives, it is part of wisdom (not morality) to take account of them from a process standpoint. The question of morality or values does arise, however, when we come to consider what resources to include in "total cost." For example, should a school include in the total cost, which is to be minimized, expenditures by agencies? In other words, how "social" should a school's view of costs be? Here we arbitrarily confine ourselves to actual and potential university expenditures, (which compels us to consider agency expenditures) but there is no reason, in principle, why a school should not include other things, such as the cost to the student of having a program last an additional month, say, if that were being considered.

---

*Such as the following: if A_1 and A_2 are possible choices, with outcomes (B_1, C_1) and (B_2, C_2), where B_1 and B_2 represent degree of achievement of objectives, and C_1 and C_2 represent resource use, A_1 is preferred to A_2 if either $B_1 > B_2$, and $C_1 \leq C_2$; or $C_1 < C_2$ and $B_1 \geq B_2$.

The principal people-resources of concern here are, then, school faculty, school support staff, students and agency instructors. These resources can be utilized in various numbers, to various degrees, and in various ways, and this is the crucial part of the problem. For the moment, however, we simply point out that the problem of estimating people "cost" is small once assumptions have been made about which people costs matter.* It is also relevant to point out that the schools may not be completely free in this regard, i.e., in deciding which costs matter: in at least one pilot school there was a university-imposed concept of cost which was significant for the school, because the university income from the school's operations was explicitly compared with the school's costs as defined by the university, as a step in the process of securing an approved budget.

3. Overhead and Other Resources

It should be noted that we do not consider that university overhead resources are always germane for the school, because such costs are not subject to school control, and because even major changes in the school--such as doubling its size--may actually have an undetectable influence on the amount of resource use of an overhead character, at least in certain categories of overhead.** However, formal budgetary procedures may involve traditional accounting practice, so that it may be necessary, at times, to ask "how will this look to the controller or president?" and to measure costs, therefore, in traditional ways. The general relevance or irrelevance of overhead cannot be established, and it may be necessary to predict--but not choose--overhead expenditures.

Prospective expenditures for "other resources" can, like those for people, be estimated easily, once the resource and its amount have been identified. If, for example, it appears that a 50% increase in office equipment will be required two years from now, we treat the cost estimation problem as trivial, since it merely involves listing the items and their predicted prices for the years of interest.

---

* Here, as elsewhere, we have ignored the potentially serious problem of uncertainty in cost estimation, partly for simplicity, partly because we believe it is not likely to be severe in practice.

** For a useful appraisal of the behavior of university overhead cost categories, see Peter A. Firmin, et. al., University Cost Structure and Behavior, (New Orleans: Tulane University, 1967). (National Science Foundation--C451)

Once the relevant resources, both personnel and non-personnel, have been identified and their amounts specified, the problem of estimating costs is small, at least if uncertainty is ignored. In cases where it is appropriate for a school to use an overhead rate, its magnitude can be viewed as specified.

E. RELATING RESOURCES TO OBJECTIVES

The heart of the problem of efficiency is that of relating use of resources to achievement of objectives. The schools can acquire various amounts and kinds of resources, and each combination will give rise to a different expenditure. However, a given combination of resources can be utilized in various ways, and each will have a different impact on the achievement of objectives. What is required is (1) a way of relating use and amount of resources to degree of achievement of objectives; and (2) a way of choosing between the various resource possibilities. The first of those we shall call an input-output mechanism, where "output" is really equivalent to "objective" and "input" refers to the resources discussed above, and the way they are used. We can, we have said, easily ascertain the expenditures associated with any specified set of resources, but the hard problem is to relate the inputs to the outputs.

Relations between inputs and outputs can be established at many levels, some of which have already been discussed. For example, if there is a single objective expressible in student-years, an input-output relation between total faculty and total trained students could be used. However, this is not very satisfactory, for reasons we have already discussed in Chapter V. There are many ways to describe the inputs and outputs which will, to some degree, help; and the sophistication or complexity of these relations must be a matter, in an important sense, of school choice, dependent on the management resources available to the school.

There is, of course, no point in having sophisticated or complex statements of objectives, if statements about inputs are very crude. If school objectives distinguish between methods, say, it will certainly be necessary to distinguish corresponding characteristics of faculty input. In the extreme case we saw that, in principle, we could view every potential, trained student as a separate "objective," and, correspondingly, we can, in principle, view every actual and potential faculty member, and every minute of the time of each of them, as a separate input--to say nothing of non-faculty inputs.

While complexity of this sort is not feasible, it is important that the relations be dynamic in nature, so that the mechanics of change are displayed and recognized, and so that long-term purposeful action can be appraised. The recognition of the need for such relations compels us to identify a class of variables or factors which are neither inputs nor outputs but which may be required in order to understand the relationships between the two; and which may therefore help us to identify a useful way to describe inputs. We call these _intermediate_ variables.

If graduate social work education is to be viewed as a production process the heart of the problem is the establishment of a useful set of relations between inputs (resources) and outputs (objectives). Each can be described in great detail, at the choice of the school, if school management resources permit. Whatever the level of detail, we need to use "intermediate" variables to track the relations between inputs and outputs.

1. Intermediate Variables

One intermediate variable which needs to be recognized is "curriculum development," since, if we wish to achieve objectives which require different courses _next_ year, one way this can be accomplished is to undertake curriculum development _this_ year. The "amount" of curriculum development accomplished might be indicated merely by identifying the courses developed, and, perhaps, certain of their characteristics (e.g., level, concentration) which depend on objectives.

The second kind of "intermediate" output we would try to identify is faculty development. We are aware that there is a school of thought which would view "faculty development" as a final output analogous to the output of MSW's, say. We do not accept this view, and are prepared to argue the merits of our position, but the point is really of no consequence for our purposes, except in terms of the measure of the "output of faculty development." If this is a final output we would seek an aggregate measure of some sort, comparable from year to year, or, for some purposes, perhaps, comparable between schools. We think there may be no such measure, except, perhaps, the total hours devoted to it. As an intermediate planning output, however, we can get by with something quite different and more useful. Faculty member F begins the year with certain capabilities, e.g., he can teach courses A, B, and C, but not D or E. If, during the year, he (and perhaps others) have devoted time to faculty member F's development, we may be able to say, at the end of the year, that he is now capable of teaching A, B, C and D, but not E.* We shall see below that this is consistent with our approach to the handling of inputs.

---

* We do not preclude the possibility that faculty development time may be required merely to maintain initial course capabilities.

A third kind of intermediate output is funds raised or anticipated by the school. It is essential to recognize that next year's funds, (which will govern the resources available next year), to the extent that they are controllable, depend on the uses of resources this year. Thus current resources may be used to try to obtain research funds or training grants for teachers or stipends for students and even--strangely--to develop next year's budget justifications which will "sell" at higher university levels.

Finally, it seems important to recognize that, if we wish to add faculty or students next year, we must make the efforts this year. Hence we require measures of the anticipated results corresponding to such efforts, where the appropriate measures depend on the objectives.

There are some variables which it is inappropriate to regard as objectives or as inputs but which are nevertheless important in understanding or planning the path from where the school is to where it wants to be. These are curriculum and faculty development; funds for various purposes, available or anticipated (depending on point in time); and measures related to potential students and potential faculty who become "interested" in the school (in part as a result of school activities).

2. Inputs

We have distinguished the term "input" from the term resources simply as a reminder that the factors which determine expenditures--which we have called resources--are insufficient to determine the degree of achievement of objectives or outputs. The latter depends not only on resources, but on how resources are used, and this is what we mean by the term "input." The question now is: what inputs shall we distinguish or recognize?

Initially it may be desirable for a school to think of inputs in gross terms because the problem quickly becomes unmanageable with very detailed specifications of inputs and with only manual methods of estimation. In addition, basic knowledge of input-output relations in education (that is, of causes and effects) is weak and insecure, and may not justify really detailed treatment for a long time to come.

Faculty and Non-Faculty Instructors and Administrators. Consider instructional activity first, (whether classroom or field, agency or faculty). At one level of aggregation we can specify* the total faculty instructional time to be devoted to courses in, say, case work, or perhaps even for all of the MSW program (for each of the next five years). At a more detailed level we can specify precisely who will teach which course at what hour, in what semesters, for as far ahead as we have chosen to look, including the specifications for people who are not yet on board. In doing so we can take account of gross faculty characteristics (such as number who can teach courses in case work) or we can take account of every detailed characteristic which can be determined concerning every faculty member, including, for example, a complete listing of all of the courses he is considered capable of teaching, all the courses he would like to teach (or not teach), all of his personal development requirements, and so on. Just how far a school should go ultimately along these lines we do not know, but, for most schools, we assume the initial specifications of instructional inputs would (and should) be relatively crude.

Just as the school can choose the amounts of input of faculty and non-faculty class and field instruction, it can also assign certain amounts of time (grossly or in detail) for other activities. Thus, for example, it can specify how much time is set aside for preparation for class, including grading papers, and so on. There is, in fact, a set of activities (of which "preparation" is one) to which faculty and non-faculty can be assigned, with the people "inputs" being measured by the amount of time assigned to each activity. A near-minimal set of "kinds" of activities for efficient operation of the graduate social work process appears to be as follows, each being at an unspecified level of aggregation (that is, the number and kinds of sub-classes may well depend on the school):

- instruction
- preparation for instruction
- curriculum development
- faculty development
- research
- raising funds

---

* The word "specify" does not imply that the choice would be a good one, but only that the school can control this factor and, perhaps, plan in terms of such factors. The problem of making a good choice is discussed below.

- promotional activities (to attract people)
- community service
- advising students (non-course related)
- all other administration.

An important special case of the assignment of blocks of time to these activities is that in which the amount of time in each activity is specified for each faculty member or agency field instructor. It should be noted, once again, that the faculty members included can be (and must be in some cases) purely speculative and perhaps not even identified specifically--e.g., a new assistant professor for the fifth year of the plan.

The principal "inputs" to the production process are blocks of time of faculty and non-faculty personnel assigned to specific activities, involving instruction, promotion, advising students, and so on, over a substantial interval such as five years. The level of detail at which this should be carried out depends on the detail with which objectives are stated, on the school's resources for such administrative or planning activities, and on the state of knowledge of causes and effects in education.

Clerical Staff. In principle, no separate discussion of clerical staff is necessary, for we could as easily have added "clerical support" to the list of activities, and pointed to the need to assign time to this activity. Further, as in the case of faculty members, we could have decided whether this activity should be broken down further and, if so, how. Perhaps the only point in distinguishing it arises from the likelihood that it can be satisfactorily treated in an aggregate way, and may be viewed, in simple formulations, as being properly derived from the total faculty time (e.g., one secretary for every four faculty).

Non-Personnel Inputs. Some non-personnel inputs are, of course, essential to the educational process and should be planned for. First, there is the question of how much "space." As with all other factors it can be dealt with at any desired level of detail, including which office will be assigned to which faculty member or doctoral student. In a long term look at the educational process, however, there appears to be little justification for detailed treatment, beyond the level of square feet of office space and classroom space, respectively. To some extent classroom space requirements (but perhaps not office requirements) depend on the scheduling of classes, as do possible teaching assignments of faculty members, but these tend to be second order problems.*

Another class of inputs which we distinguish we call simply "supplies." It may be reasonable to make this class cover all non-personnel and non-space items over whose use the school has control and for which dollars must be exchanged. We also believe it may be unnecessary to distinguish the various kinds of supplies, although a tentative plan may call for the allocation of "supplies" to particular activities. "Supplies" in this concept, includes everything from stationery to desks to airline tickets, but we feel justified in this aggregate treatment because of the relatively low cost and generally non-critical nature of the choice. An appropriate measure of input is therefore viewed as the total dollar value of supplies, plus allocation of these supplies to at least some of the activity categories.**

In addition to the physical items which we identify as inputs to the educational process (staff, space, supplies) it is also necessary to have a curriculum, that is, a list of the courses being offered, including the number of sections for each. From a planning point of view this input is, like all others, tentative; but it is essential.

Clerical inputs, inputs of space and supplies, and curriculum are also classes of inputs which must be treated in a long-term plan.

Student Inputs. Untrained and partially trained students are, of course, essential "inputs" to the educational production process. Although not usually so considered, they can be viewed as, in some respects, completely analogous to faculty. For one thing, they can be--and are--"purchased" as faculty are; that is, students can be induced to attend by stipends. In one pilot school there is a significant formal allocation of university funds for this purpose--some of the university budget pays for faculty, some for students. However, even in schools where this is not so, funds for both students and faculty are obtained by the same application process (to the Government), while funds for teachers may be obtained from the university also.

---

* Some day, of course, a comprehensive long-term planning model will include detailed scheduling of the use of classrooms, but that is a long way from being an important issue in the current state of the art.

** A problem which we merely note here is how to draw the line between those items which the dean should plan for (include in "supplies") and those which should be treated as "overhead." An illustration of the problem is provided by "telephone" (use or expense).

The school can also exercise certain controls over students, analogous to those for faculty. For example, it can insist that they attend certain classes. It can refuse to admit students who do not satisfy its criteria, or admit only a certain mix (e.g., two case work to one group work)--although the latter is not usually done. And it may have the same problems of attracting adequate numbers and quality of students as for faculty. Thus, from an input standpoint, there would appear to be a marked similarity between students and faculty with the principal difference perhaps being that (a) there are some students (but not faculty) who are willing to pay rather than be paid for their participation in the educational process; (b) there may be a somewhat broader range of activities for faculty than for students; and (c) students do not (yet) get tenure. It is even true that, just as it is possible, sometimes, not to renew a faculty member's contract, so it is conceivable that admission will not guarantee graduation of students.

Untrained and partially trained students are, in many ways, inputs which are analogous to faculty and other staff.

Voluntary Input. For some purposes it is important to recognize that there are "inputs" to the production process which are physically indistinguishable from those already discussed but which are not inputs in our sense. We refer to voluntary, or individually determined, assignments of time to the activity categories previously discussed. Thus a faculty member may decide to keep up with the times by doing two hours of reading every night, or he may undertake some research on his own, beyond anything that might be assigned.

In every category of activity, then, (however detailed our categories) we can--and should--distinguish two components, one being assigned by the school, the other (which will often be zero) being selected by the individual faculty member. In sophisticated formulations it may be necessary to specify the connection between the two kinds of components; so that, if an individual is assigned, say, an administrative task, we must inquire about its effect on a voluntary assignment to, say, a research task.

Besides the assignments to activities made by the school, it is necessary for it to keep track of voluntary or self-imposed tasks, and of the possible relations between the two.

3. Establishing Input-Output Relations

A basic notion underlying the concept of a production process is that there are controllable factors (inputs) which significantly influence, even if they do not determine, the values of the outputs. We have discussed the problems of specifying inputs and outputs, and we want now to address the question of how the input-output relations are to be established.

We can distinguish many different kinds of input-output relationships, depending upon a number of factors. First there is the question of the level of detail at which the inputs and the outputs are specified, even without different objectives and different determinations of what "costs" matter to the schools. A special aspect of this relates to choice of measures, e.g., for research output. Secondly, because many input-output relations are models, that is, hypotheses, the appropriate models--and even the appropriate way to establish them -- depend on the knowledge and information available to the schools, to say nothing of the total resources that can be devoted to it. It is clear, therefore, that it is not possible to deal with the model problems which will be encountered by every school, or, indeed, by any particular school. Every choice of objectives, or of relevant inputs, or of measures, or of level of detail, and every state of information, will give rise to a different situation.

However, by identifying some of the major kinds of activities which should, in our judgment, be recognized, and by pointing to some major kinds of intermediate variables which provide an essential dynamic link between one year and the next, we have implicitly specified certain kinds of relationships between inputs and outputs which need to be "estimated" somehow. We select three of these for discussion to show what may be involved in establishing various input-output relationships.

There are too many possible school situations to be definitive about how input-output relations are to be established. Every school will have different specific problems, and their nature can only be illustrated here.

Obtaining Applicants. It is our view of the world (which is basic to our formulation and need not be accepted by any school) that the number of applicants which will be obtained next year has two components: (1) the number which would be obtained if the school "did nothing" this year (beyond what it has done in the past) to attract them; and (2) the change in this latter number which would be obtained if the school undertook to change its various actions. Hence we are led to say that the number of applicants next year (output) depends on the number of applicants last year and on the controllable inputs,(a) time spent by faculty in obtaining applicants, and (b) the "supplies" (measured in dollars) allocated to obtaining applicants.

A portion of this relationship can perhaps be guessed at from knowledge of how many applicants were obtained in past years, but how responsive is the number of applicants to deliberate, assigned inputs of faculty and money? Initially, in many schools, constants of our input-output relation will have to be guessed at, but, as experience is gained and records kept, it may be possible to derive them empirically. It may, indeed, be desirable to change the postulated relationship to correspond with a better understanding of the process.

Curriculum. This year's curriculum is, of course, given. Next year's curriculum, however, depends on what we do this year. There are three kinds of things the school can do this year which may influence next year's curriculum. First, it is possible to assign faculty to develop specified new courses. Secondly, new faculty members can be hired for next year, and may bring new course knowledge to the curriculum. Thirdly, curriculum possibilities may be lost through faculty attrition or failure to renew contracts. Our input-output model then takes the simple form: Curriculum next year (output) must be drawn from (cannot exceed) the current curriculum capabilities of current faculty, plus the new course capabilities developed by them, plus the course capabilities of new hires, less those lost by contract termination, less those lost by resignation.

This is a logical relation (inequality) which may have an important influence on what is done about curriculum development, new faculty and terminations.

Instruction. The problem of constructing input-output relations for instruction is, of course, central to the whole educational process. It is, in a sense, merely a very brief way to sum up many of the real educational problems for which there are no satisfactory answers. What difference does class size make to quality? What difference does a teaching center make? What influences does it have if we assign eight students rather than six to a field instructor? Is the dominant factor in determining the quality of the trained student the quality of the untrained student? Obviously, educators do not know the answers to such questions, and we certainly do not.

Despite this, the fact of life is that educators must behave as if they do; that is, they must constantly make choices which imply that they have some feeling for the answers--at least to the extent that they acknowledge objectives with respect to the number and quality of trained students. In the current state of knowledge it is these beliefs, feelings, intuitions, insights and misconceptions which govern, because we have only primitive measures of input and gross measures of output. To make a bad matter worse, if a school assigns students in a way which is inconsistent with its own theories of education it can always assert that the output quality was better that way, because it is the school itself which decides even how many it has successfully trained.

The obvious and dominant fact about instructional processes in graduate social work education, and the input-output relationships which are appropriate for describing them, is that they are established by personal belief and judgment, perhaps, in some cases, subject to overriding constraints of budget and university policy. Therefore, only the schools can determine what the relationships are between input and output in instruction.

What form should these input-output relations take, given the current state of knowledge? We suggest that every course be considered separately, and every instructor similarly. In each case constraints should be identified reflecting current belief. In the case of a given course, the principal constraint might be of the form "no section larger than x or smaller than y" where x and y reflect beliefs about the educational process.* In the case of the instructor many constraints may have to be identified: the courses he is deemed capable of teaching satisfactorily (or not teaching); the amount of time required, for each such course, for preparation; the number of students he is deemed capable of handling if a field instructor; and other characteristics which depend on how ambitiously things are conceived.

Ideally, of course, we would like input-output relations in this area to show how, in a given course, the number and quality of students trained in that course varies with such things as class size, instructor, choice of textbook, the time of day at which it is offered,** and so on. Probably, however, we shall never know, because some fundamentals of the system clearly change faster than we can establish their impact, e.g., textbooks, instructors, and so on. Furthermore, as we have suggested, there is at least a reasonable possibility that, within any observable range of variation of some factors (such as textbook), it would not make enough difference even to cover the cost of a successful research effort along these lines. Thus certain kinds of crudity may be inherent; that is, we may never know enought to deal with certain phenomena analytically.*

---

* Including the possibility, of course, that x represents infinity, and/or y represents zero. This is a cheap way to introduce ideas on quality.

** This is not a facetious statement.

In addition to the judgmentally determined limits on class sizes for each course, constraints may need to be established (judgmentally) on other inputs, e.g., there must be at least S square feet per student in class C; or students must be in the second year before being permitted to register for it; and so on.

We note, then, that the appropriate devices for dealing with input-output relationships in instruction, given our current knowledge, seem to be via judgmental limits (inequalities) rather than equalities of the kind suggested above for applicants or curriculum. It goes without saying, perhaps, that nothing we have said about the mechanics of establishing input-output relations, important as that is, even addresses the question of how choices should be made (e.g., how big class C should be). There is no denying, however, that there is an important connection between the two, for if we say, for example, that field instructors can handle up to eight students each, and if we utilize some concept of efficiency in making decisions, our statement about field instructors will tend to generate a course of action in which precisely eight students are assigned to each.

Three kinds of illustrations of possible input-output relations are discussed, to suggest what might be involved in their construction, given our current state of knowledge. Many or most of the constants of these relationships need to be supplied judgmentally by the schools, and thus "merely" formalize beliefs. However, even statements of this kind can have a very important impact on what is done (and on costs), since the requirements of logical consistency may then affect choices.

4. The Complete Set of Input-Output Relations

As we have suggested, the set of input-output relations which is appropriate will vary with many factors, from school to school, and we have discussed three kinds of relations illustratively. But what does a complete set look like? There is no general answer to this question; and, even for a given school at a given point in time, there is no assurance that any particular set of relations is all we should have. These relations are constraints on choice, and we can keep adding constraints, if we choose, until there is no more than one course of action which is consistent with them, that is, until the input-output model "makes the decision." Just how far to go in this direction is, once again, a matter closely related to the situation of the individual school, its state of information, and so on.

---

* We do, however, believe, as suggested later in this report, that something can and should be done to come to grips with the issue of a more objective determination of achieved quality levels in education. The nature of the input-output relations which might then be feasible and desirable would, of course, change substantially.

We can, however, suggest some classes of constraints (or input-output relations) which seem to us to be essential:

(1) There must be constraints which relate the actions (e.g., faculty assignments) taken by the school in a given year to, respectively, the following variables for the ensuing year: applicants, enrollments, budgets (including Government funds), curriculum, faculty and agency.

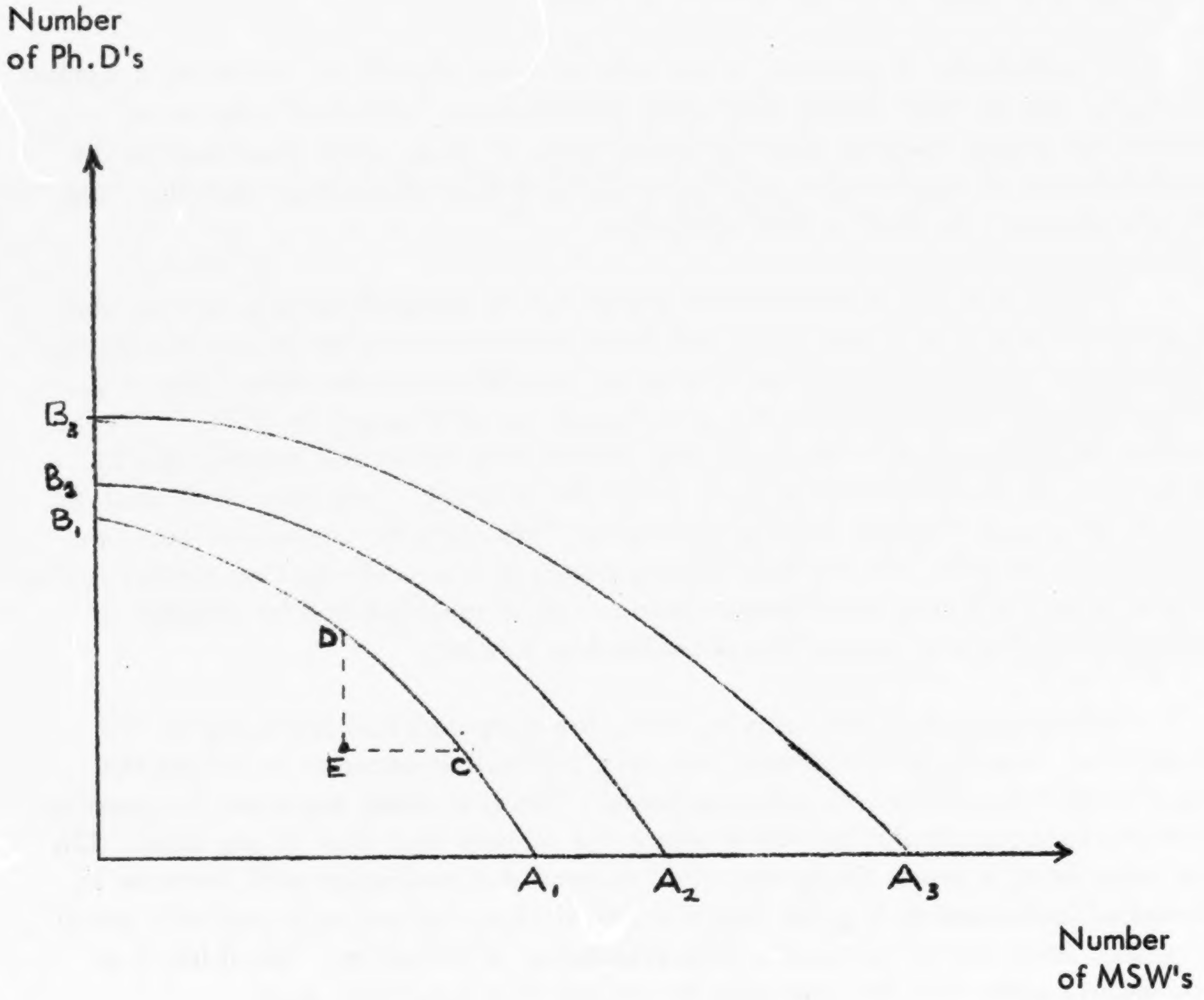
(2) There must be constraints, within a given year, relating to the following topics and perhaps of the following kind (given the budget, the faculty, the agency, the curriculum, the students), namely:

- individual faculty limitations of all kinds (e.g., the total number of hours he can be assigned);
- individual course limitations (e.g., not to exceed 35 in a section);
- clerical support must be at least one for every M faculty.

There is no definite point at which we can say, "This is the complete set of input-output relations," unless, perhaps, it is that set which leaves no room for choice, but certain constraints are very important.

5. The Implications of the Relations Between Inputs and Outputs

What is the significance of the set of input-output relations, once they are developed? In general they will not specify the choice to be made, but will constrain choice, at least if the postulate of efficiency is accepted. We can illustrate what is involved geometrically if we consider a simple case in which there are objectives in only two dimensions, namely, MSW's and Ph.D's and it is assumed that, other things being equal, an increase in the number of either is a "good thing."



Consider the curve $A_1 B_1$, which represents the best that can be done with a given budget. We could spend that given budget to achieve a point such as E, but this is obviously a poor thing to do, because any of the points between C and D, on the curve $A_1 B_1$, represents a higher level of achievement of objectives. Thus, for the budget in question, the curve $A_1 B_1$ is the only set of points which should be considered. Similarly, for successively higher budget levels, only $A_2 B_2$, etc., should be considered.

Where do these curves come from? They are obtained by constructing and using a set of input-output relations, plus the basic assumption that we do not wish to incur expenditures for which no return is achieved. The input-output relations establish an operational concept of efficiency, but since, for a given budget, we can choose any point on the corresponding curve, these relations do not in general establish the choice to be made.

In real cases, in general, there will be many objectives, covering a number of years, and we must expect that there will be many "efficient" courses of action--so many, indeed, that the school may, in time, want to go beyond the establishment of input-output relations, which ensure efficiency, and seek help in determining "the best" course of action.

There are a few simple devices which can be adopted to help decide what is best, although the school itself will have to determine what devices to employ. Perhaps the best way to proceed is to adopt restrictions on the objectives; e.g., "turning out a Ph.D is three times as important as turning out an MSW." (In the simple two-dimensional case illustrated above, this restriction is sufficient to determine the best course of action, given the budget). Less restrictive devices on the same axes involve statements such as, "We want to turn out at least ten Ph.D's" or "at most 100 MSW's." Corresponding to everything that matters to the school (e.g., minority enrollment) there are devices which can be adopted to make the problems of choice and planning less onerous.

It perhaps goes without saying that, the more detailed and complex the objectives, inputs, and relations, the more difficult it becomes to utilize the input-output mechanism on a manual basis. This is a strong argument for keeping everything fairly simple--which is where the schools must start in any case. On the other hand it seems likely that the input-output mechanism will increase in potential usefulness as it gains realistic detail, but, before much realistic detail is added, some sort of automatic data processing is called for. We think it is abundantly clear that this can only be viewed as a long-term goal.

The establishment of even crude input-output relations can be viewed as a first step in achieving efficiency in graduate social work education. As more is learned, and realistic detail added, the input-output mechanism can become a planning device, that is, a device which makes it possible to examine many efficient alternatives, and to narrow the range of choice acceptably. For substantial movement in this direction, manual techniques of computation will not be sufficient, but the important first steps are the same in any event, and may require a good deal of time to accomplish.

6. How should a School Proceed?

We have said that schools need to become production-oriented, and have suggested the kinds of things which must be done; e.g., the school must establish objectives. Implicitly, too, we have suggested the need for new, continuing data for the operation of the schools; e.g., there is need for information on how faculty time is spent, if only to strengthen judgments about assignments. Similarly, we speak of school judgments as to the appropriate limits on the educational process, e.g., eight students per field instructor. How are all of these activities to be initiated?

Our study of pilot schools convinces us that the schools largely run themselves, subject, of course, to constraints, as all things are. So long as that situation endures there is no way for any "outsider" to bring about a change, except by persuasion. We think it is, first and foremost, the deans who need to be persuaded--or the "influentials," whoever they may be. It is also clear that the deans or other influentials must carry the burden of persuading their colleagues to move in the directions indicated. We think it possible that help can be given from the outside, but without the active involvement and support of the schools nothing can be accomplished.

So long as the schools "run themselves" no movement will take place except by persuasion of the deans and other influentials. Help in accomplishing the transformation can be given, but will not be effective without commitment by the schools.

Chapter VII

THE NATURE AND SIGNIFICANCE OF FURTHER STUDY

A. SUMMARY

It is clear that changes are desirable in the modes of operation of schools. It is far from clear, however, how such changes should be accomplished. To some extent change depends on the voluntary action of the schools themselves. On the other hand it is also true that change can be induced by Government action, such as policy changes. It is suggested that an appropriate research course might involve a compromise between the two: that is, developing data and analyses which will (1) help the schools to help themselves--and thereby promote the Government's interests as well, and (2) permit the Government to make whatever inferences it is currently possible to make about policy.

One possible research course, consistent with the initial objectives of this pilot study, is to develop information comparable to that displayed in this report for the pilot schools. This is seen as having two possible outputs. From the Government point of view, it could provide school cost data which would be reliable from a gross or national prediction standpoint, but could not be relied upon for individual schools. The latter is not significant, however, since the data would not be available for allocation purposes. In addition, it might be possible to throw more light on such questions as the differences in cost between MSW and Ph.D programs, and thus possibly lay a foundation for policy determination.

The second kind of result which might emerge from such a study pertains to the uses which might be made of it by the schools themselves. Just how it would be used cannot be determined, but it is clear that a school which wished to change its mode of operation could utilize data about other schools to stimulate such a change.

An alternate research course involves the conception that study of the schools should be a continuing matter, and should be aimed at helping the schools to determine what courses of action to take. This course of action implies a cooperative effort along the lines indicated in Chapter VI. It also implies a deliberate effort to learn from the joint experience of schools some characteristics of the educational process which are unlikely to emerge from any other course of research action.

However, since these courses differ greatly in probable eventual benefit and cost, it is desirable to initiate short-term steps which will make it possible to defer decision as to the "ultimate" nature of future research efforts. The nature of such a compromise is suggested.

The report concludes with recommendations on the next steps which should be taken by the schools and the Government, respectively.

It is recommended that the Government initiate a "national" study, involving all schools which are willing to participate, which would be aimed at (1) generating cost data/analysis of the type presented in this report, (2) assisting the schools to begin to transform themselves into production operations. The latter would involve a cooperative, contractor-assisted effort to establish operational measures of objectives, inputs, quality, and so on, in such a fashion that data which might eventually be generated would be common from school to school, and throw light on educational processes.

B. INTRODUCTION

This pilot and exploratory effort was undertaken primarily to establish a methodology for relating the operating and policy characteristics of schools to costs, on a national basis. The question which must now be considered is whether, and how, this can be accomplished.

We have tried to suggest that, in our view, there is only a weak relationship, in general, between costs in any one school, and the kinds of factors which are really of interest, and we attributed this to the absence of a concept of efficiency. If, in a given school, we observe that costs "for the master's program" seem to be lower, on the average, than for the doctoral program, there is little reason to believe it reflects fundamental operating and policy characteristics. Although there are, in our judgment, differences between schools with regard to the extent to which cost or efficiency considerations have influence, we do not think that any school operates in such a way that analytic input-output models, with explanatory content, can be constructed for that school.*

These matters were considered at length in Chapter V, for the individual school, and need not detain us here. A question which we must consider, however, is whether better or more useful inferences can be made on a statistical basis, via a national study. We can illustrate the fundamental distinction between the approach taken in this pilot study, and that which could be taken with a large sample, by considering an analogy from medical research. We might observe, minutely and closely, the behavior and characteristics of a small number (say four) of individual human beings, including even post-mortem examination, without uncovering a clue as to the relation between diet and heart disease--even if both diet and heart disease were observed. On the other hand, a statistical analysis of a large sample of human beings, in which we knew nothing about the subjects except their diet patterns and heart disease history, might be very suggestive indeed.

Further, in considering the possibility of a national study, we shall have to look at the question of what "national" means, the information which might be obtained, and by what means, how useful it might be, and to whom. We shall have to inquire which of several approaches best serves the basic interests of schools and the Government.

---

* "Explanatory" here means "capable of explaining the phenomena of interest," e.g., what is the effect on costs of a change in the mix of master's and doctoral students?

C. ONE-TIME NATIONAL STUDY

In its work statement for this project the Government's interest was declared to be in "a study...on a national basis," and this, like the words "a national survey," was interpreted by us throughout most of this project to mean that the design of a one-time, national study was a major objective of this effort. If we continue to think along these lines where does it take us?

1. What Is A National Study?

This pilot study could, from one point of view, be considered a national study, since its focus is certainly national, and schools from any geographic area in the United States might have been included. Taken in context, however, it seems clear that the word "national," was intended to have the connotation of comprehensiveness, for it was assumed--correctly, as it turns out--that the fundamental operating characteristics of the schools could not be determined in any other way. It was, in short, assumed that a large sample would be required to determine the effect on cost on such phenomena as size. In its broadest sense, we must interpret the concept of a national study as being equivalent to the concept of a large sample.

It seems clear, too, that we must view participation in such a study as being a voluntary activity on the part of schools. In principle, the Government could clearly make the price of non-cooperation very high, but the gain from such a course of action seems likely, on balance, to be very small in view of the probable difficulty of such a course. In practice, therefore, a "national" study means a study of all those schools which are willing to participate.

To some extent, of course, the participation of schools will be dependent upon such factors as the amount of effort which is required of them in order to participate, and the benefits which can be anticipated. A national study can, therefore, be designed to encourage participation, but it is clear that what the schools can do without effort will yield relatively little benefit, so there are important considerations of judgment involved.

Perhaps the dominant feature of a national study from a research standpoint is that the largest possible sample is, statistically, small in the light of the evident complexity of the educational processes involved. We might, for example, expect costs to differ from school to school, depending upon such major variables as student enrollment, mix of programs (such as MSW and Ph.D), mode of field instruction, salary levels, and perhaps other factors. If, for the sake of argument, we assume that there would be fifty participating schools in a national study, it is clear that the results might well be suggestive but could not be regarded as establishing the effect of, say, size.

This view of the potential significance of sample size is strongly reinforced when we consider our finding that the operations of the schools tend not to be strongly influenced by rationalistic weighing of resources and objectives; that is, we can expect the random component of any statistical relationship to be very large indeed. The situation is not unlike that which might be expected to emerge from a study of fifty, geographically dispersed, farms, each producing somewhat different crops (e.g., different kinds of corn), being mechanized to different degrees, with various kinds of management, with different soil conditions, different amounts and kinds of fertilizer, different amounts and kinds of labor, etc. Now, it is well known that fertilizer can have a major impact on agricultural productivity, but even knowing this in advance, we would be very hard put to even illustrate its effect with fifty observations, because the observations might be dominated by the vagaries of weather.

2. Data And Data Collection

General Nature of Data. In our judgment it is feasible and reasonable to consider collecting data of the kind presented earlier in this report from all cooperating schools.* These data are of two kinds, corresponding to the distinction made earlier between existing data and new data, where the latter consist primarily of faculty activity and agency cost information. We can conceive of a national study which encompasses only the existing data, or one which includes one or both kinds of new data.

Viewed from the perspective of a one-time national study, it seems reasonable to try to obtain as much information as possible. Further, it is difficult to see how meaningful fiscal data comparable between schools can be obtained without some attention to the agency problem, just as it is difficult to imagine that fiscal data alone could be a very effective stimulus to remedial action by the schools (since there would be little indication of how the schools were using their resources). In short, the data content of a one-time national study should be comparable to that already presented in this report.

Data And Instrument Revision. This does not mean, of course, that some revisions in data are not desirable. For example, a less detailed version of the faculty activity survey would be called for. It would also be desirable to redefine some major categories, along the lines of activities identified in Chapter VI of this report. The accomplishment of such changes is a minor, judgmental matter which can only be done arbitrarily; e.g., how important is it to distinguish between curriculum development activities which occur in committee and those which are carried on on an individual basis.

---

* It is also feasible--and desirable--to include undergraduate education in any future study of schools.

Similarly, it is known that the agency survey form could be improved in a variety of ways (as could the faculty survey form), based partly on perceptions of the misunderstandings and errors which occurred in completing the forms. For example, it is clear that better definition of what was sought, (perhaps placed in close proximity to the questions being answered), would help. Once again, however, these are viewed as minor, judgmental matters which need to be resolved, but which have no significance in terms of the major direction of research effort.

Data Collection Techniques. Turning, now, to the means of collecting data in a national survey, it should be observed that, aside from the new data collected with respect to faculty activities and agency costs, no forms were utilized in the pilot study; that is, they were obtained by personal visit and interview. Lists of desired data items, together with instructions for their derivation or preparation, could, of course, be prepared and sent by mail to the schools. However, the difficulty of formalizing data requirements are well known, particularly when it is not possible with confidence to anticipate the situation of every school. In our judgment there are many advantages to an extension of pilot study procedures, with basic data being collected through personal visits by the contractor. With preparation by the contractor and advance notice to the schools of the data items being sought, it is estimated that the data for each school (to the extent that it currently exists) could be collected in under two days per school.

This leaves, as the only unresolved major data collection issue, the questions of how to conduct the faculty activity and agency activity surveys, on a detailed basis. Based on experience in the pilot study, it is our judgment that the most effective technique for agency data collection is likely to be via the use of a school field work consultant to make personal contact with the agencies and to insure completion of the questionnaires. However, it may be desirable to give agencies the option of completing and returning the form directly to the contractor or of having the form completed by the school consultant after discussion with the agency.

The situation is far more complex with respect to the conduct of the faculty survey. We believe that response could be materially improved by wise selection of a faculty member to present the topic to his colleagues and to enlist their cooperation; this, at least, was an inference we drew from differences in response between schools. This leaves open, of course, the whole question of whether to use journal entry recording or a work sampling procedure or both, and over what interval of time. We need not consider here the basic advantages and disadvantages of these techniques, since they have been discussed extensively in the literature. We think it important that observations be taken over a significant interval of calendar time, perhaps the whole year, so that perhaps the best compromise between many conflicting considerations is a sampling approach which calls for cooperating faculty members to keep a record of their activities for an interval of, say, a week at several times during the year.

3. Benefits of One-Time National Study

The potential benefits of study of the kind just discussed may be considered from two points of view. First, there is the question of what the Government would obtain from such a study. The Government's initial interest was in the discovery of the basic characteristics of the schools which determine their costs. In view of the largely non-rational operation of the schools it is clear that the only hope of identifying such regularities as exist is via statistical analysis of a large sample.

However, because it is not possible for our sample to be large in a statistical sense, it seems fair to describe the probable output of such a study as being suggestive of the basic determinants of cost. It should, perhaps, be added that "basic determinants of cost" here means those factors which would be dominant if concepts of efficiency played a strong role in the operation of the schools.

In addition, it is to be expected that, for the first time, meaningful and comparable fiscal data would be obtained for a large sample of schools. Although the Government would not have individual school data if confidentiality were maintained--as, we assume, it must*--the data could, in our judgment, be used to provide a solid foundation for national budgeting of financial assistance to schools.

Conceivably the data collected could be utilized as a basis for many different kinds of policy determination by the Government. The nature of policy changes that might be considered by the Government depends, in our judgment, on an appraisal of the potential impact of Government actions upon the operation of the schools, and would carry us far afield were we to undertake it. It is clear, however, that there is hardly any aspect of school operation which could not be the subject of a Government policy.

How Would The Schools Benefit from Such A Study? Although it is not possible to be specific about how the results might be used within the schools, or by whom, the results could be significant for those schools seriously interested in achieving an efficiency orientation. For one thing, knowledge of what other schools were doing could be a powerful stimulus to examination of the merits of the school's current practices. Secondly, the participating schools would have assembled an initial data base for their own operations which, however crude, and however much it might conflict with their objectives and their assessments of their own needs, would still be of value in moving along the lines indicated in Chapter VI. The benefits here are the benefits of suggestion and stimulus; they are not the benefits of a formal management data system--which this study would make no attempt to provide.

---

* Implying the use of a private contractor.

D. CONTINUING STUDY

Despite what appears to have been the Government's initial intent, we do not believe that our preconceptions, formed prior to the study, should determine the alternatives which receive consideration at this time. Moreover, it already seems evident that there is need for change in the mode of operation in the schools, so that it is possible to argue that we should be more concerned with achieving such change than with describing the schools as they are. Further, if a study of the kind discussed above should be carried out, if it should be effective in terms of either Government policy or self-initiated changes by the schools, the schools themselves may change enough to require restudy.

Principally, however, we are led to consider the possibility of some sort of continuing study of the schools by the recognition that schools are, in general, poorly equipped to implement the kinds of changes suggested in this report, if they should be so inclined. It needs to be recognized, too, that this report, and even participation in a larger one-time effort, are not likely to be major forces in bringing about change in the schools, even where the need for change is acknowledged.

There appears to be good reason, then, to consider the possibility of continuing study of some sort which would have as its aim better operation of the schools. It is important to understand, however, that we are not here discussing the design of what are sometimes called "management information systems." Our interest is a research or study interest; that is, it is an interest in the development of knowledge and understanding. The understanding which we and, we think, the Government and social work educators seek relates to the fundamentals of social work educational processes, rather than to the current operating characteristics of the schools.

1. Basic Study Concept

One of our greatest needs is, clearly, for larger samples. The obvious way to obtain more observations is by replication; that is, we could simply replicate a study such as that discussed above, and collect, say, fifty sets of observations each year. This would certainly improve our knowledge of current operations, but would be a relatively weak device for assisting the schools. It would have no direct implications for what the schools ought to do, or how they ought to proceed.

Further, when we consider the great unknowns of the educational process, such as the difference it makes whether an instructor devotes a day a week or an hour a week to a student, or even whether there is any detectable difference in the "quality" of graduates attributable to the schools--it becomes apparent that mere replication does not go very far. Suppose, then, we were to think in terms of large scale, controlled experimentation, in which the activities of every school were centrally directed, and careful observations were made of numerous aspects of the processes used, e.g., faculty characteristics, student characteristics, process characteristics, and so on. We might then hope to come to grips with some of the major issues. However, even if central control were abandoned, and each school left to determine its own mode of operation, we could still learn a great deal from such a process, provided only that there were common measures from school to school and careful observation. In our view the principal hope of gaining an understanding of social work education resides in the possibility of establishing common systems of measurement and observation and well-defined modes of operation for each school. These are the conditions which are conducive to meaningful comparisons of effectiveness and costs.

As it happens if the schools are to achieve efficient operations, as discussed in Chapter VI, they will necessarily also achieve well-defined modes of operation: they would be defined, indeed, by the input-output relations which we have discussed at length. To that extent, therefore, the requirements for achieving efficient operation coincide with the requirements for the development of basic knowledge.

The requirements for the development of basic knowledge impose an important new dimension, namely, a certain uniformity and commonality of measurement and observation between schools. If, then, we move to assist the schools to implement the ideas of Chapter VI--and hence achieve efficiency--and, at the same time, generate common measurements and observations we are, at one and the same time, improving the the operations of the schools and laying the groundwork for improved understanding of educational alternatives. It is obvious that neither of these objectives can be achieved without long-term continuing study.

2. How The Study Might Be Accomplished

No study of the kind being discussed here could begin to be carried out without the wholehearted support and cooperation of the schools who might be involved in it. It is conceived as, quite strictly, a program for volunteers--

volunteers who are committed to the idea that there is need to change the way they do business, even in the current state of knowledge, as well as to improve the state of knowledge. We do not know how many schools might fall into this class; nor do we face here the question of how their participation might be arranged for.

The first stages of such a study might be devoted to the establishment of the basic categories discussed in Chapter VI. Thus, for example, we discuss the problem of establishing objectives and pointed to the legitimacy of, and even the need for, different aspirations. What is being proposed, therefore, is not that the schools establish common objectives, but that they establish the same proximate measures of achievement. Thus, for example, a particular school might have no objectives in the area of research but might be asked, nonetheless, to keep certain records or make certain observations bearing on that subject.

Similarly, inputs and their usage must be established, as previously suggested, and there are major potential advantages to social work education as a whole from the utilization of common categories of description. Obviously, this implies nothing whatever about the operational choices which are made (e.g., how many courses a faculty member should teach), but would make meaningful comparison possible. An analogous situation exists, it may be noted, with respect to the use of dollar measures of resource use, which makes phenomena comparable in some respects but implies nothing about best.

Perhaps most importantly, it would begin to make possible meaningful study of educational quality by establishing common dimensions and measures of the attributes which are important in determining quality. At later stages, assistance could be given to the schools in establishing planning systems which depend on the school's own internally generated data; that is, input-output relations could be established for each school. Eventually, by utilizing the joint experience of participating schools, it should be possible to reach sound conclusions as to whether particular features of the educational process were or were not having an impact on quality. As a special, but extremely important case, we note the possibility that as soon as common measures of input and output had been established, it would be possible to reach conclusions about whether even the gross differences between the schools made any difference at all.*

---

*We recognize the possibility that this may be more than some educators want to find out, in which case, participation would not be recommended.

3. Emerging Measurement Systems

Elsewhere in this report we have noted the appearance of a number of university-level measurement systems, bearing primarily on resource utilization. There is a likelihood that, in time, every university will establish a measurement system, and that every school of social work will in some way conform to university reporting requirements. It is quite unlikely, however, that measurement systems which emerge in this way will have the essential property required for research, to which we have pointed here, namely, common measures of inputs, outputs, and processes, as between schools. It is also unlikely, it may be added, that they will have the coverage required for research and suggested here. However, once such systems are entrenched in the schools, it will, we believe, be too late to view social work education from a comparative analytical standpoint. We see it as important, therefore, to move toward the establishment of common measures in schools of social work.

4. Benefits

The benefits of study of the kind indicated are perhaps sufficiently evident not to require extended discussion. A study of the kind indicated would give significant assistance to the schools in taking the steps necessary to achieve efficiency. It may be appropriate, here, to record out belief that it is at least as important a Government purpose to help the schools to help themselves as it is to determine other appropriate policies.

Secondly, a study of the kind indicated would begin to make it possible to do more than talk about the critical problems of educational effectiveness; that is, we could begin to study the relation between quality and the actions taken. Note that we are not saying that we know how to measure "quality." What we are saying is that it is possible to establish measures which, in the light of the judgments of social work educators, it is important to observe. They may be wrong, of course--but we will never know that either unless we begin to take some observations.

E. COMBINING SHORT-TERM AND LONG-TERM CONSIDERATIONS

If we consider the fundamental distinctions between the ideas discussed in Section C, described as "One-Time National Study," and those contained in Section D "Continuing Study," it can be seen that the differences are only minimally related to the issue of studies which benefit the Government versus those which benefit the schools. The basic issues are:

(1) Whether to take a short-term or a long-term view of the research problem; and

(2) Whether one weights heavily the desirability of stimulating certain kinds of change in the schools.

Both the Government and the schools can be viewed as having short-term interests which can be served by the kind of one-time study described. Both have interests which may be served by continuing study. Since, however, the Government cannot really make a long-term commitment in the area of research, the question which must be faced is not that of long-term versus short-term, or of where we might go ultimately, but one of defining appropriate next steps. In our view appropriate next steps are steps which combine the principal benefits of one-time and continuing study, and which may therefore have significant payoff even if not continued beyond the first steps. Appropriate next steps would meet the most pressing needs of both the schools and the Government.

The dominant needs which emerge from this study are threefold.

First there is a clear and pressing requirement for the schools to transform their mode of operation. This will not be easy. It will require dedication and, in some cases, help. Only then will it become possible to talk in meaningful terms about "the relationship between major operating and policy characteristics and costs in accredited graduate schools of social work."

The second major need is to begin to take a look at the fundamental questions which have so far been largely ignored analytically and which will, so long as this ignorance persists, provide a plausible basis for irrational behavior. These are questions which relate to quality in social work education.

The third major need is that initially expressed by the Government for planning and budgetary informating with regard to costs.

F. RECOMMENDATIONS

It is recommended that the Government, using contractor assistance as appropriate,

(1) adopt a policy of helping the schools to transform their own operations into production operations;

(2) undertake initial educational and exploratory efforts with school officials (through the use of this report, seminars, etc.) to enlist cooperation in a joint effort, and to determine the extent of voluntary participation in a self-help program;

(3) based on the interest generated, develop a specific program and timetable for assisting the schools to

  (a) develop their own school objectives as a basis for decision and action;

  (b) develop their own input concepts, so that they can choose which inputs "matter";

  (c) develop their own breakdown of school activities, (including "intermediate" activities) at a level consistent with their own needs, including agency activities as appropriate;

  (d) develop their own constraints (e.g., upper limit on class size, maximum assigned work load for a faculty member);

  (e) develop a common set of measures or observations of inputs, outputs, and processes (including faculty activities and student in-going and out-going quality);

  (f) collect data on costs and other aspects of operation of schools, as such data currently exist;

  (g) conduct an analysis of these data in order to identify, so far as possible, the most important factors currently influencing costs;

  (h) collect first data on common measures of input, output, quality, cost, etc.;

  (i) conduct an analysis of such data to determine whether the differences in educational processes are sufficiently great to detect an impact on quality;

(j) develop planning mechanisms which will, so far as possible, assist the schools to identify the best course of action consistent with objectives, including, eventually, the use of advanced data-processing techniques;*

(k) encourage specific educational experiments to be conducted in some places (but not in others) so that the field can move toward better education; and,

(l) carry out continuing analyses of comparative data, and assist schools to identify and accept new (revised) common measures of objectives, quality, and inputs.

The recommended activities are planning activities, up to this point, and should be implemented via a planning phase (Phase I), covering both (2) and (3) above.

Implementation of these plans should take place in a number of steps. The first (Phase II) would involve carrying out the activities referred to in 3(a) through 3(g), above. Phase III would cover 3(h) through 3(j). The activities of 3(k) and 3(l) would be the subject matter of subsequent phases.

With appropriate Government action, the planning activities which are the subject of Phase I could be completed prior to the beginning of a new academic year, and Phase II, it is believed, might be completed during the academic year ahead.

Even if nothing is ever done beyond Phase II, a study of this kind would give all of the short-term insight--once the readily available school data were analyzed--which it is currently possible to obtain. It would, in our judgment, be a strong factor in moving the schools toward efficient operation, and would lay the essential foundation for an approach to basic factors in social work education. An important feature of Phase III is that, as soon as data had been collected on a common basis for only one year, it would be possible to assess the extent to which gross differences between educational processes (if they exist) have an impact on quality, output, and costs of current modes of operation.

---

*Machine processing is viewed as desirable because it takes the drudgery out of examining a great many alternatives, and, in that sense, may make it feasible to examine many. It will not eliminate the need for human judgment, but, will, hopefully, shift such judgment away from the tasks of a logical and/or arithmetic nature, to those which deal with the great imponderables.

Finally, we note that, if we are ever to come to grips with perhaps the most fundamental question of all, namely, the relation between education and practical or professional performance, we must move down a research path of the kind indicated, which permits us to characterize the outputs of the education process in ways which are thought by educators to be meaningful, so that we can determine what difference these characteristics make to on-the-job performance. The approach would provide an essential input to this last task.

It is hard to imagine what research in social work education could have higher priority than a project which promises to improve both its effectiveness and its cost; and to provide an essential item for other urgent research.

BIBLIOGRAPHY

An Assessment of Quality in Graduate Education, (Washington, D. C.: American Council on Education, 1966).

Bernard Berelson, Graduate Education in the United States, (New York: McGraw Hill, 1964).

Gustav Cassel, The Theory of Social Economy, (New York: Harcourt, Brace and Company, 1932).

Helen Cassidy, Editor, Modes of Professional Education, Functions of Field Learning in the Curriculum, (New Orleans: Tulane University, 1969).

Catalogue of Functional or Program Service Categories, (New York: United Community Funds and Councils of America, 1968).

Closing the Gap in Social Work Manpower, (Washington, D. C.: U. S. Government Printing Office, 1965).

College and University Business Administration, (Washington, D. C.: American Council on Education, 1952).

Robert L. Ebel, Editor, Encyclopedia of Educational Research, (New York: MacMillan and Company, 1969).

Robert Elkin, Final Report of Project on Child Welfare Costs, School of Government and Public Administration, The American University, (Washington, D. C.: The American University, 1969).

Robert Elkin, Relating Program to Costs in Children's Residential Institutions, (Washington, D. C.: The American University, 1969).

Field Learning and Teaching Explorations in Graduate Social Work Education, (New Orleans: Tulane University School of Social Work, 1968).

Peter A. Firmin, et. al., University Cost Structure and Behavior, (New Orleans: Tulane University, 1967).

T. Haavelmo, "The Probability Approach in Econometrics," Econometrica, Volume 12, Supplement, 1944.

John G. Hill, Ralph Ormsby, William B. McCurdy, *Time and Cost Analysis Series,* (New York: Family Service Association of America, 1962).

Charles J. Hitch, *Decision-Making for Defense,* (Los Angeles and Berkeley: University of California Press, 1965).

Ernest V. Hollis and Alice L. Taylor, *Social Work Education in the United States,* (New York: Columbia University Press, 1952).

Laurin Hyde, *Planning Professional Social Work Education in New York State--1968,* (Albany: New York State Department of Education, 1969).

Theodore Lang, Walter B. McFarland, Michael Schiff, *Cost Accounting,* (New York: The Ronald Press Company, 1953).

Alton A. Linford, et. al., Reviews of: Werner W. Boehm, The Social Work Curriculum Study, *Social Service Review,* (Chicago: University of Chicago Press, December 1959).

Frank M. Loewenberg, Editor, *Statistics on Social Work Education, 1968,* (New York: Council on Social Work Education, 1969).

Katherine Lower, *Work Loads in Schools of Social Work,* (Bryn Mawr: 1964).

Alec L. Macfie, *Economic Efficiency and Social Welfare,* (London: Oxford University Press, 1943).

Fritz Machlup, *The Production and Distribution of Knowledge in the United States,* (Princeton: Princeton University Press, 1962).

Thomas A. Mahar, *A Guide for Applying Cost-Benefit Analysis to Planning Welfare Programs,* (Washington, D. C.: The American University, 1969).

Objectives and Guidelines of the WICHE Management Information Systems Program, (Boulder: Western Interstate Commission for Higher Education, 1969).

Perry Mason and Sidney Davidson, *Fundamentals of Accounting,* Third Edition, (Brooklyn: The Foundation Press, Inc., 1953).

Roland N. McKean, *Efficiency in Government through Systems Analysis,* (New York: John Wiley & Sons, Inc., 1958).

Paul F. Mertins, *Financial Statistics of Institutions of Higher Education: Current Funds Revenues and Expenditures*, (Washington, D. C.: U. S. Government Printing Office, 1969).

Paul F. Mertins, *Financial Statistics of Institutions of Higher Education: Student Financial Aid*, (Washington, D. C.: U. S. Government Printing Office, 1969).

Selma J. Mushkin, Editor, *Economics of Higher Education*, (Washington, D. C.: U. S. Government Printing Office, 1962).

Paul K. Nance, *Business Management Practices in Selected Colleges and Universities*, (Washington, D. C.: U. S. Government Printing Office, 1966).

David Novick, Editor, *Program Budgeting*, (Washington, D. C.: U. S. Government Printing Office, 1964).

Paul L. Reason and Alpheus L. White, *Financial Accounting for Local and State School Systems*, (Washington, D. C.: U. S. Government Printing Office, 1966).

Joan Robinson, *Economics of Imperfect Competition*, (London: MacMillan and Company, Ltd., 1948).

Francis E. Rourke and Glenn E. Brooks, *The Managerial Revolution in Higher Education*, (Baltimore: Johns Hopkins Press, 1966).

Edward E. Schwartz and Martin Wolins, *Cost Analysis in Child Welfare Services*, (Washington, D. C.: U. S. Government Printing Office, 1958).

John E. Stecklein, *How to Measure Faculty Work Load*, (Washington, D. C.: American Council on Education, 1961).

John E. Vaizey and John Sheehan, *Resources for Education: An Economic Study of Education in the United Kingdom*, (London: Allen and Unwam, 1908).

Harry Williams, *Planning for Effective Resource Allocation in Universities*, (Washington, D. C.: American Council on Education, 1966).

Social Welfare Education in Wisconsin, (Wisconsin Coordinating Council for Higher Education, 1968).